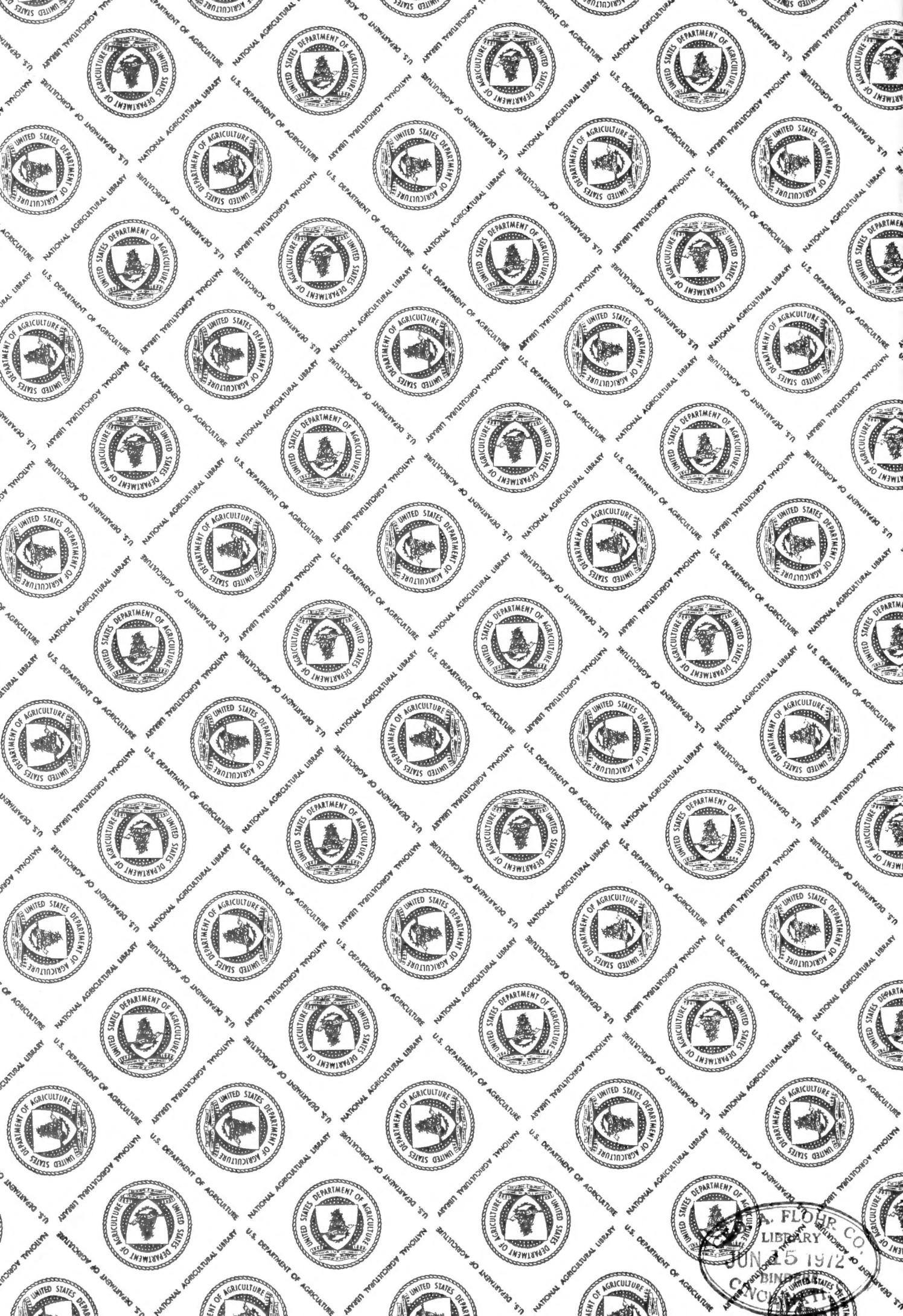
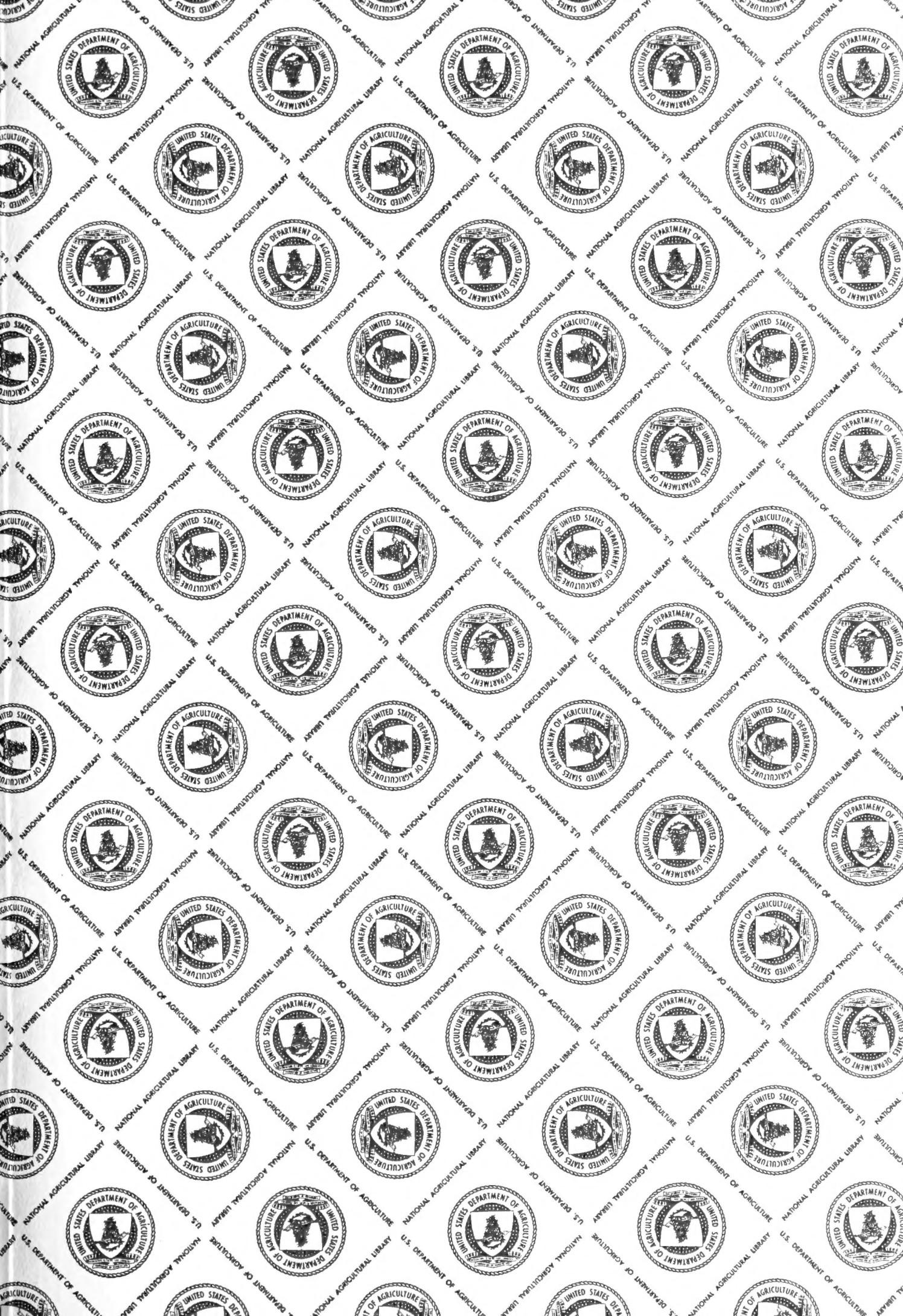


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THE COTTAGE GARDENER,

COUNTRY GENTLEMAN'S COMPANION,

AND

POULTRY CHRONICLE:

A JOURNAL OF HORTICULTURE, RURAL AND DOMESTIC ECONOMY, BOTANY,
AND NATURAL HISTORY.

CONDUCTED BY

GEORGE W. JOHNSON, Esq., AND ROBERT HOGG, Esq.

THE FRUIT and FORCING GARDEN, by Mr. R. Errington,
Gardener to Sir P. Egerton, Bart., Oulton Park.

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TO OUR READERS.

Two of the earliest acts of Miss PENELOPE POMEROY, upon arriving in London for the season from Cackleton House, in Cornwall, are to pay her Seedsman's bill, and to do the same virtuous deed for the advertising in our columns her "Dorking Eggs from Prize Birds."

Miss PENELOPE very recently visited our old Office—regular as the sun, and, like him, gold-tinting; and whilst there, her ears caught the inquiry made by one of "the Row Boys"—"When's your housewarming?"

It may be necessary to explain to some of our readers, who cultivate Geraniums beyond the Grampian Hills, that "the Row Boys" are a small genus, forward in habit, and who, in addition to much chaff, bear books and periodicals. We do not mean that they produce the books and periodicals, but that they collect them from the producers, and carry them to their employers—the Booksellers.

Now, when the said "Row Boy" inquired about our "housewarming," it became needful to interpret to Miss PENELOPE that he alluded to our purposed removal to a new Office.

"Well, I would never do *that*. I would make a shift, and remain doing as you are."

"That is precisely what we intend, dear madam. We intend doing as we are—bearing good fruit—fruit for the reader, fruit for the workmen, and fruit for the proprietors. But the box in which we now are we have outgrown—our roots have filled it; and therefore, as you justly observe, we must 'make a shift,'—and we are not quite sure that we shall obstinately adhere to 'the *one-shift* system.' When our roots fill a No. 162, into which we are being shifted from a No. 20, we do not think it would be evidence of bad cultivation if we shifted into a size larger."

Yes, our Readers, your approval—the most fostering of all sunshine to a literary plant—has made us outgrow our old Office, and we have shifted into one better suited to our development. In nothing else will there be any change. The same officials, with the usual new aids—the same efforts to be useful will be apparent; and may these obtain for us such a continuance of sunshine, and such additions to our soil, that we may grow still more vigorously, and have to be shifted into a size larger before twenty more of our volumes have appeared.

Let us, in conclusion, again record our thanks to all who aid and encourage us; and not least warmly to that reverend gentleman who informs us—in words almost too strong—that, like the flower in "Piccioli," we have poured out a measure of comfort and usefulness even within the walls of a prison. "I could surprise you," says the Chaplain of that prison, "with the account of the advantages which, under God's blessing, THE COTTAGE GARDENER has bestowed upon me. I have always full and pleasurable employment for every spare five minutes. At all times—in all weathers—in all seasons of the year—in health or sickness—amidst cares and vexations—in walks by the roadside or meadow—by the seaside, or hill or dale—what intense happiness have I enjoyed since I have had possession of your work; inasmuch as, next to the Bible, it manifested to me, in every case, the wisdom, and power, and mercy of God, in and over all His most minute works of creation."



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WEEKLY CALENDAR.

Day of Mth	Day of Week.	OCTOBER 5-11, 1858.	WEATHER NEAR LONDON IN 1857.						Clock afterSun	Day of Year.		
			Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.		
5	TU	Balsamina latifolia alba.	29.670—29.659	65—34	S.W.	.08	9 af 6	28 af 5	2 af 4	28	11 32	278
6	W	Balsams.	29.732—29.688	60—32	S.W.	—	10 6	26 5	22 5	29	11 50	279
7	TH	Bauera latifolia.	29.415—29.077	64—48	S.E.	.32	12 6	24 5	sets	20	12 7	280
8	F	Blandfordia intermedia.	29.103—28.781	63—41	S.	.55	14 6	22 5	21 5	1	12 24	281
9	S	Browallias.	29.553—29.248	55—40	W.	.04	15 6	20 5	39 5	2	12 40	282
10	SUN	19 SUNDAY AFTER TRINITY.	29.833—29.716	64—46	W.	.20	17 6	17 5	3 6	3	12 56	283
11	M	Calceolarias.	30.050—29.820	68—54	S.W.	.02	19 6	15 5	35 6	4	13 11	284

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 69.3° and 43.0°, respectively. The greatest heat, 80°, occurred on the 5th, in 1834; and the lowest cold, 28°, on the 9th, in 1849. During the period 109 days were fine, and on 108 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

CLEAR off all crops that are done with, and get the ground manured, dug, and planted, or ridged up, if heavy, to expose it to the pulverising influence of the winter.

ASPARAGUS.—If the tops are decayed, cut them close to the ground; the beds to be then cleaned, and covered, about three inches deep, with rotten dung or leaves. The alleys to be left untouched, as a great portion of the roots of the Asparagus extend to them, and would be destroyed by digging.

BRASSICA.—To check luxuriant growth, which renders the plants most susceptible of injury from frost, it is advisable to dig them up, and to lay them in by their heels; that is, in trenches, in nearly a horizontal position, covering the root and stem up to the leaves.

CABBAGE.—Plant out the main spring crop as soon as possible; and such as were planted in August for Coleworts, to be earthed-up. Finish pricking out the August sowing into beds.

ENDIVE.—Blanch a few full-grown plants every week, and plant the last crop on a warm, dry, south border, or on a raised bank.

RHUBARB.—Clear away the decayed leaves, and dress with a little good soil such plants as are intended for early forcing.

SEA-KALE.—Gather seed when ripe; and, where early forcing is intended, it is advisable to clear away the leaves as soon as they begin to decay.

TURNIPS.—Thin the late sowing cautiously, as they will not require so much space apart as the spring and summer sowings.

FLOWER GARDEN.

No time should be lost in taking up all choice plants that are worthy of preservation, and of housing the plants which have been placed during the summer out of doors. Every pot to be examined, and if any of the plants are water-bound, or the soil in which they are growing is too heavy, or wet, they must be turned out, and the drainage corrected, or they must be fresh potted, if necessary. The casts on the surface of the soil will indicate the presence of worms, which are generally found when the ball is carefully turned out of the pot; but, if they should not be visible, a stick placed in the pot will direct attention to its frequent examination until they are picked out.

ANEMONES.—Plant. Select fresh, plump roots of moderate size, in preference to large, overgrown ones, that are generally hollow in the centre, and often decayed. The preparation of the bed, and the distance between the roots, to be the same as recommended for *Ranunculus*.

BULBOUS ROOTS.—Plant without delay all the hardy sorts, such as *Hyacinths*, *Jonquills*, *Narcissuses*, *Gladioluses*, *Crocuses*, *Snowdrops*, *Crown Imperials*, No. 523. VOL. XXI.

Fritillarias, *Winter Aconites*, bulbous and tuberous *Irises*, &c., in beds and borders.

DAHLIAS.—Earth well above the crowns, that a sudden frost may not injure them.

POLYANTHUSES.—Plant, and increase by carefully dividing the roots.

RANUNCULUSES.—Plant. The scarlet-turbaned is the most hardy, and produces a brilliant effect. The bed to be dug from eighteen inches to two feet deep, when a portion of rotten horse-dung, or cowdung, should be mixed with the soil. The surface of the bed to be raked perfectly even and flat, and the roots planted, with their claws downwards, in shallow trenches, about two inches deep, and from three to four inches apart. Having previously sprinkled some sand in the bottom of the trench, cover the roots with the same soil that was taken out, so that they may be as nearly as possible one inch and a half deep; for, if more or less, a second root is formed, and a weakened growth, or bloom, is the result.

ROSES.—Use the knife, to produce a regular form, by removing dead wood and suckers, and by shortening all stragglers or gross shoots. As a few fine flowers are preferable to a greater number of indifferent ones, it is advisable, at this time, to reduce the number of shoots, that the energies of the plant may be more concentrated for a future and better display.

TULIPS.—Plant offsets, and prepare the best beds, by frequently turning in dry weather, for planting about the end of the month.

Advantage may be taken of favourable weather, to remove deciduous and evergreen trees and shrubs, to make improvements in gardens and plantations, and to lay down turf or lawns.

WILLIAM KEANE.

KEW GARDENS.—AUGUST 30, 1858.

(Continued from page 359, Vol. XX.)

THE terrace, or Italian garden, in front of the large conservatory, is the best specimen of scientific grouping I know of near London. There is a large middle or centre bed, from which the rest are worked in. This is planted with the variegated Mint and with *Flower of the Day Geranium*,—the two best plants in England for the centre of such a group. The four corners, or end corners, the farthest from the centre, are in scarlet Geraniums. One must be wide awake to catch these four beds at one glance, from opposite the centre, and the effort to compass the strongest colour of the group in one view causes a deception of size. The size appears, by the effort, to be much larger than it really is by measurement. The next four beds, on the outside and nearer the centre, are of *Calceolaria amplexicaulis*, which seem to soften the scarlet in the distance; and from the yellow the colours decrease in effect towards the centre, on the cross line through the centre of the group, and on the perpendicular section, along the middle, from end to end. But, instead of saying

section and perpendicular, which some people do not know the meaning of, let me compare a group,—say, if this group of beds be stretched out on the grass at full length, the section corresponds with a man's loins, and the perpendicular to his backbone or spine. Now, the only fault which can be said to exist in this group is, that the spine is a little too strong for the loins of a healthy, full-grown man. The spine is made so by two beds of *Cerise Unique* Geranium, which fall into the perpendicular line, not far from the centre. The *Cerise*, at a short distance, is as powerful a colour as Scarlet itself, and these two beds seem to attract the eye, in its effort to take in the four corners. Therefore, I would change them, and place one of them on each side of the loins, or cross section, where *Mangles' Variegated* is, and put something more neutral in their place; then, by reducing the over-strength of the spine, and adding that to the strength of the loins, you could not see a more healthy-looking man than the group would make. The frame, or skeleton, would be complete on a natural science principle, and its dress could be changed afterwards according to fashion.

As thousands of our readers go to Kew, I may say that the best place to "read off" the beds of either end group is from the gravel terrace, in front of the large conservatory, and opposite the centre of the end figure or group,—that is, opposite the loins of the figure, and a little above and away from it. One can no more judge rightly of a flower garden from passing through it than judge a picture from putting the nose close to the painting.

Across each end of this terrace are two flower-beds, which have no connection with the groups. They are thus planted,—four or five rows Scarlet Geranium in the centre, a good row of *Flower of the Day* all round, and an edging of *Lobelia speciosa* round that,—a very rich bed. From the terrace to the regular promenade arrangement, down the centre walk, from the lake to the old conservatory, the beds are promenade sideways, and consist of two groups of three beds on each side, two circles of six feet across, and one oblong, twenty or twenty-four feet long, coming in between them, and of the same width across; and the like three beds on the opposite side of the walk form a group. Then the four circles of this kind of group are always planted alike, and the two oblongs also alike, with something different from what is in the circles,—and that is promenade planting.

At the bottom of the centre part of the grand terrace at the Crystal Palace this is the arrangement, but there is room for only one row of beds. At Kew, all their promenade beds come in matches, which is the best way. The first four circles, on leaving the terrace, are planted with *Perilla Nankinensis*, with *Purple King* Verbena round it, and *Charles Dickens* Verbena for an edging. This is their first attempt at shading. The two oblong beds of the group are of *Countess of Ellesmere* Petunia, edged with variegated Mint and *Mangles' Variegated* Geranium, "half-and-half,"—one of the very best of edgings when kept well, as all their beds and edgings are kept here. The next four circles are of one kind of excellent blush Verbena, with a lilac eye, called *Hippodamie*. It is seen here every season, and is the only one I asked for the Experimental. The two oblongs were of *Calceolaria amplexicaulis*, edged with blue Ageratum, trained down. We are now looking down from the top of the grand promenade, through the centre of Kew Gardens, the lake, with a fountain in the middle, immediately behind us. The place is a large circle of gravel, with a green circle of grass in the centre, which grass is, perhaps, thirty feet across, more or less. This plain, flat grass circle, at the top of a grand leading walk across the garden, is the meanest conception I ever

knew of in a garden plan of much merit. Sooner than leave it as it is, I would put away the grass circle, and leave the whole in gravel, which would be the smallest step in the right direction. This large circle of very moderate gravel, to induce company to go round a little piece of excellent grass, instead of walking right across it, is simply a preposterous make-believe; but it gives an occasion to make four long, oblong beds round it, and these four beds are just now, or rather were just then, the very best flower-beds in all England. The four were of *Punch* Geranium, edged with Mint and *Mangles'*, "half-and-half."

Now, down the grand promenade, the first four circles, two on each side, and the oblong between each two, are of *Cuphea strigillosa*, or *ignea*, which they say is the lawful name: these are edged with *Cerastium tomentosum*, as at the Crystal Palace. The two oblongs—*Calceolaria amplexicaulis*, edged with a double row of *Cerise Unique*—are very good, as both kinds do capitally well here. In the next group, four Conifers take the place of the four circular beds, the two oblongs being the two best flower-beds I ever saw,—say, three or four rows of *Flower of the Day* in the centre, one row of *Brillante* Geranium round it, and fourteen inches of *Purple King* Verbena for an edging. Next group was four circles of a new double, white Petunia,—all a dead failure,—but I have a grand story to tell about double Petunias. These were edged with *Géant des Batailles* Verbena, the two oblongs being blue Ageratum, with the variegated Ageratum next to it, and all edged with Cerastium. Next group, four Conifers, and two oblongs in standard Roses and Mignonette;—nothing suits better than Roses and Mignonette in this kind of arrangement, and I hope they will never mix another kind of flower with their Roses in that part of the garden. Next group, four circles of *Oenothera sparsiflora* for *OE. Drummondii*, edged with *Defiance* Verbena, or one like it; the two oblongs, *Tom Thumb* Geranium, edged with variegated Mint and *Pink Ivy-leaf* Geranium, mixed, and doing capitally. Next, four Conifers, and the two oblongs of *Shrubland Rose* Petunia, edged with *André* Verbena,—rather too much of a tint to be copied. The next, four circles of *Lord Raglan* Verbena, edged with the aforesaid blush *Hippodamie*,—very good; the oblongs of *Calceolaria amplexicaulis*, and double row of *Cerise Unique* again;—altogether this is a splendid group. It is succeeded by two circles of *Kniphofia (nijosia) uvaria*, the ancient and original name for *Tritoma uvaria*, edged with blue *Campanula Carpatica*. The best edging for all the Tritomas is *Tritonia aurea*, planted three rows thick, the roots not more than three inches apart every way. They are hardy enough at Kew to stand any winter with a little covering of cinder ashes, tan, or cocoa-nut refuse,—the best thing in the world to put round cold frames and over half-hardy things, and also ten times better than tan to plunge pots in, for cold pits, or for bottom-heat from pipes; and, sifted, it is equal to Reigate-sand for cuttings to root in, and better than leaf mould when rooted,—that is, before it rots, which it takes a long time to do.

This brings us down to the centre of the promenade, where two walks cross the main walk at a short distance. The next half begins with two circles of the same Kniphofia, and the colours in all the groups is a duplicate of the other half, the only difference being in having Geraniums—*Jackson's Variegated*, the old *Pink Nosegay*, and *Patrick's Seedling Nosegay*, which is here called *Atrosanguinea*—all in different ways, and edged with *Perilla Nankinensis*. Also, two circles of *Flower of the Day*, with Perilla edging; and two more of it, edged with *Nierembergia gracilis*.

In another part of the grounds, Heliotrope mixed with *Hamlet* Verbena did well. A large bed of the

newish *Phygelius capensis* shows it to be of the best bedding habit, if trained down; but it can never make but a neutral bed, on account of the bad, red-brick colour of the flowers.

On the west side of the large conservatory, the boundary hedge of Yew to the terrace garden takes a half-moon like curve, and a walk along the half-moon, from that front, divides it into two quadrant-like figures. These two fans, or quadrants, are sunk panels, twenty inches, or two feet, lower than the rest of the ground, except a circle in the centre of each panel, which is as high as the original surface. On each of these circles an *Araucaria imbricata* is planted, on grass; and round the edge of the circular platform is a set of flower-beds, in four divisions, leaving a good space of grass between them and the stem of the Araucaria. Is this, then, a better arrangement for landscape-gardeners, than to have the whole platform of dug earth, with the beds as they are? All I can say is, that it is not calculated to give so rapid a growth to the trees, which might be an advantage for such trees as are apt to grow too fast, and too late in the season to ripen properly. The flowers look very gay round these trees: they are Scarlet Geraniums, Calceolarias, and some dwarf Dahlias, mixed. The sunk parts are for the best kinds of Rhododendrons, and other best Americans, which look remarkably well; but they have been hosing water on them through the summer as if they were so many houses on fire.

At the two opposite points of the sunken fans are circles filled with *Anemone Japonica*, which come in for their share of this deluge. This is, perhaps, the only flower-garden plant which will do in a low, moist bed, by the margin of a bog, or high up upon rock-work. It is on a rockwork at Claremont, as gay as can be, and I have it on the driest spot in the county, and never water it on purpose, and it blooms most luxuriantly. But my kind is the cross which Mr. Gordon got at Chiswick. On each side of the walk, through this American ground, are flower-beds and shrubs, "turn about,"—a shrub for the circle, and the oblongs in bedding plants,—beginning with a pair of very good dwarf *China Roses*, chiefly *Fabier*; the next pair of *Calceolaria amplexicaulis*, mixed with *Aggeratum*, and edged with *Countess of Ellesmere Petunia*, which looks very well. The next match is of *Lord Raglan Verbena*, edged with variegated Mint, kept quite low,—very good. After that, *Hamlet Verbena*, and *Heliotrope*, edged with the dwarf French Marigold; then a pair of *Countess of Ellesmere Petunia*, which is just at home at Kew. The next, *Brilliant de Vaise*, from the suburbs of Lyons, and *Lord Raglan Verbenas*, both in the way of *Defiance*; but *Brillante de Vaise* has a very small bright eye, and *Lord Raglan* a large eye, and a shade round it. But I have a selection from 300 kinds of Verbenas, taken last August from an experimental row of them, which is 400 yards long in a straight line in the full blaze of the sun. The next two are of *Calceolaria amplexicaulis*, edged with *Countess of Ellesmere* again; and the last pair is of the blue *Campanula Carpatica*.

Beyond this, on the same line of walk, is where the pillar Roses are planted, but not pillared yet. There are to be ten pillars on each side, and round-headed trees in between, which will look extremely well. Meantime, while the pillar Roses are in progress, the beds are planted pincushion style, and chiefly with *Punch Geranium*. At both ends of the large conservatory are the best Dahlias, and the bedding Dahlias, including Mr. Dods new white, which is rather too long in the flower-stalk. There are also large masses of them round Hollyhocks, resembling those at the Crystal Palace.

There is a set of experimental beds near the hot-houses, to prove everything, new or old, before it is

allowed to enter into competition with the grand show. I looked them over, but I never tell tales out of an experimental, till a thing is decided on. However, having invited Mr. Craig, the head of the flower-garden department, to see our Experimental, I gave him full power and authority to tell of everything he saw with us, how it was, and how it looked.

The *Victoria Lily* has been removed to the old hothouse ranges, and the house for it, next the large conservatory, is full of other water-plants, and covered with climbers,—a collection of fancy kinds of the Gourd family and *Dioscoreas*. The snake Cucumbers are enough to chill one's blood, especially one who had seen a patient who was stung by a real British adder, and whose whole body, for nearly two days, was flushed with the same colours as the reptile. *Momordica Charantia*, as it is labelled at Kew, or *balsamina* of some books, is by far the prettiest of the race. When it is ripe, it splits open, curls back like a Fuchsia, and shows the seed like coral beads, all of the richest tints, from orange to the deepest crimson. *Charantia* is the proper name. The grand blue Water Lily of Australia, *Nymphaea gigantea*, was in bloom, along side of *Victoria Regia*. It is really a noble thing. All the houses, hot or cold, damp or dry, are now furnished with popular flowering plants, just like country conservatories, but more gay,—to please who? The people, to be sure, who pay for all these improvements. But if all the "acts," from Cromwell's time to this, for improving the people, were put into one book, and committed to memory, they would not improve any of us in a lifetime, half so much as one season's visits to these gardens and hothouses. It would fill a book to name all the plants I saw in the house; yet, if one had them all by heart, they would not improve him, or her, nearly so much as gay, popular tribes. But I must mention *Cuphea eminens*, as an exhibition plant. It is a beautiful thing, with large Pentstemon-like flowers, in long terminal spikes, in shades of orange and red.

There is the most curious and noble *Gunnera scabra*, which Darwin found in Chiloe, where they eat the footstalks of the leaves as we do those of Rhubarb. Mr. Darwin measured a leaf which was nearly eight feet in diameter, very much like a Rhubarb leaf, and four or five of these enormous leaves, presenting together a noble appearance. The plant is out at Kew, but covered a little from the frost. It was throwing up for bloom in a most singular way,—a long pointed pyramid, studded with long mammillaria-like teats; also, bundles of the Cow-itch flowers, looking at a short distance like bunches of *Black Hamburg Grapes*; and, what I had never seen before, the *Encephalartus pungens*, the Caffre bread, in fruit.

But I must return to better things for improving the people. Standard Fuchsias I inquired diligently about, and here are the best kinds for making standards of, to bloom in or out of doors—*Wonderful*, *Tristram Shandy*; *Admiral Boxer*, the father of *Wonderful*, as they say; *Autocrat*, the latest bloomer; *Donna Joaquina*, *Prince Albert*, *Globosa magnifica*, *Souvenir de Chiswick*, and *Variegated*, all of which would make first-rate standards. The following kinds would do best for climbers,—many of them are now up the rafters of the show houses:—*Acteon*, of which there are six or seven in the Colonnade at the Crystal Palace; *Venus de Medici*, *Clapton Hero*, *Prince Arthur* (double), *Flavescens*, *Voltegeur*, and *Volcana del Aqua*; white climbers—*Fair Oriana*; *Von Wrang*, the children's favourite; *Queen of Hanover*, *Silver Swan*, and *Snowball*. At Kew they grow immense quantities of Fuchsias for decorating the houses, and the above is the cream of them for standards and climbers.

D. BEATON.

COMPARING NOTES.

(Continued from page 405, Vol. XX.)

CALCEOLARIAS FAILING.

What a general wail there has been about these! Many gaps have been made, or else they have been filled with things never thought of at planting time. The season, as a whole, has been as trying to Calceolarias as it has been favourable to Scarlet and other bedding Geraniums. Clear sunshine and comparative dryness are the glory of the latter. Clear sunshine and a warm atmosphere also suit the former, but only if the roots are moist and cool. This is the great secret of getting well-furnished beds of Calceolarias, and the idea is borrowed from the position in which they are naturally found on the sides of the mountains of Peru. Notwithstanding all this care, however, it would appear that many of our best kinds, such as *Caies' Yellow*, *aurantia*, *floribunda*, *viscosissima*, &c., are kept healthy with great difficulty. One reason is, that the kinds get tired of the soil. I have two beds of *Caies' Yellow* that are pretty good this season, but nothing to what I have had it; but a year or two ago it was next to a failure in a prominent place, partly owing to being too dry, and water being too scarce for the purpose. The *Kentish Hero* used to be a gem with me, producing, not bunches, but branches of bloom, more than two feet in length. Now I have pretty well given it up in despair. The leaves get covered with black spots, as if affected with leprosy, and I have found no complete cure. I have hitherto had little trouble with the older species, such as *rugosa* and *angustifolia*. This season, my least effective is a row of *rugosa*; but that I chiefly attribute to two things:—first, there was a row of Calceolaria in the same place last year, rather against my usual system, as I can seldom change the soil in a bed; and secondly, in such circumstances, I ought to have planted much thicker, and then the effect would have been more massive. As it is, the plants are too thin, though they might have grown better under more favourable circumstances.

I have had compact, neat beds of *rugosa*. Yet, unless for its more light lemon colour, I do not consider it equal to *angustiflora*, or what I call such; and here I wish I had the memory of my coadjutor, Mr. Beaton. The sort I mean has rather an upright, spiry growth, and very dark green foliage. There is a variety of *integripolia*—though how, with its serratures, it should get that name, I never could see—called *angustifolia*,—or, I presume, something of that way,—which is not so strong growing as the one I have spoken of above: it is weaker altogether in its habit, the flowers more inclined to droop, and the leaves much narrower, and rather yellowish green in their hue. The latter is to be avoided, if the first, with the dark green foliage and stronger habit, can be obtained. A friend of mine has used the weaker sort in a ribbon border, and has been disappointed because it did not grow tall enough. I have seldom seen the old green-leaved variety fail. I have had several beds a perfect mass of bloom this season, even though, after high winds and heavy rains, great quantities of flowers have been dislodged. Another dwarf yellow has done moderately well here,—and extra well in some places, called the *Clumber Yellow*.

Round some of the *angustiflora* beds, I had a ring of a dark one,—*Indian Chief*,—raised by the late Mr. Brown, of Hampstead Road, which is upright in habit, and with small, narrow foliage: it is an old favourite, but being outside, and not sheltered by plenty of foliage, the heat and dryness have been rather too much for it. Among darkish kinds, the *Prince of Orange* (a brownish orange) has been everything that could be desired for two years; but it has done extra

best, where its own green foliage, and a thick edging of something else, have kept the roots from being freely acted upon by sun heat.

The *aurea floribunda* looks as if it would do well for a dwarf bed; but I have noticed a few leaves with the black patches. In the spring of the year, I noticed some plants in the garden of Mr. Kemp, a tradesman of St. Albans, that seemed to have the compactness of *aurea floribunda*, with much more vigour and luxuriance of growth; but I have heard nothing of them since. Mr. Kemp had a small house filled with seedlings. From that quarter we have had some of our best bedders. Mr. Coles, I believe, raised *Prince of Orange*.

On the whole, then, if we cannot succeed with some of the finest shrubby hybrids, we must fall back upon some of the older species, as *angustiflora*, *amplexicaulis*, &c. And, so far as colour is concerned, we cannot be so badly off for yellow, when we have double Chrysanthemums, which bloom all the summer over; dwarf double yellow Marigolds, which come true from seed; *Callopis Drummondii*, not seen so often as it deserves to be; and *Oenothera macrocarpa*, which, if encouraged, will be a blaze of orange yellow in the summer and autumn months; not to speak of *Oenothera prostrata*, for small beds and edgings.

SNOW'S LETTUCES.

In noticing these last season, I regret that I only helped the seedsmen to make confusion worse confounded, amid their *Compact* and *Matchless*, as described in their seed lists. The Messrs. Henderson, who had the seed true, fell into something of a similar error. Be it known, then, that Mr. Snow has sent out no Lettuce which he calls *Compact*. Instead of that, it should be called for under the name of *Matchless*. It is the best Lettuce I have met with, for late autumn use, for standing the winter, and coming in very early for use in the spring, at the foot of a wall or otherwise, folding itself up tight as a green *Cos*, and needing no tying. As I previously remarked, though it does well in summer also with some people, with me it bolts sooner than many others. For autumn, winter, and spring use it is invaluable, and as yet, I believe, *matchless*. The other sort is a hybrid, and named the *Champion*, a large, crisp, summer Lettuce. Having found the names confounded, and helped to keep them confounded, I feel a pleasure in setting the matter right; and I hope that in future mistakes will not so occur as to neutralise the efforts of the grower, as each Lettuce is chiefly valuable in that season in which it is recommended to be grown.

R. FISH,

APRICOTS.

THERE has been much discussion about the eligibility of the stock on which the Apricot is budded; but the question would appear to be unapproachable, for no progress seems to be made therein. The dying-off of shoots or branches, here and there, has been attributed to the defective stocks; but there is some room to doubt this. It requires some stretch of imagination to think, that whilst one portion of a tree is extremely healthy and productive another portion is barren or dying away. Besides, although such complaints do exist, yet it is notorious that every year, in one portion of the kingdom or another, Apricots do succeed to admiration. So that, after all, is it not possible that the failures complained of may be chargeable on climate alone? One thing is quite certain,—the Apricot will not endure a very low temperature in the growing season, and is, as I think, by no means indifferent to extreme winter depression. As for a low spring temperature, when Apricots are in blossom, or advancing, it is perilous in the extreme. Therefore, whatever

may be charged on the stock, we may rest assured that, however probable, the case is not proven.

It may not be amiss here, to examine into the mode in which their growth is produced. In this respect, they are very different from the Peach and Nectarine: they are shorter and firmer jointed, and altogether the wood has a very different aspect. But they also make their growth in a very different way. The Peach, when commencing growth in the spring, goes off in a most impulsive way, unless aphides, or some other hinderance, stands in the way. If the tree is in health, it seems inclined to burst almost every bud, collaterally as well as terminally; and these coincidently rush forward, with a seeming impatience, until the tree is almost choked with its new growth, and the whole speedily becomes confusion. This, of course, leads at once to the necessity of disbudding, as most of the readers of THE COTTAGE GARDENER know by this time.

But the Apricot is not in such an impetuous mood at the period of germination. Whilst the blossom-buds are unfolding, and up to the time when the fruit is as large as Peas, there seems little inclination to "make wood," as gardeners term it; indeed, for the most part, the trees look in a somewhat pitiful plight; nature seems more bent on caring for the old spurs than in producing new ones; and for some weeks there is little inclination for much extension, and Midsummer approaches before any great production of shoots takes place. I apprehend, therefore, that the sap vessels have not that capacity for rapid transmission which the Peach may possess; and that, from such circumstances, and the indurated character of the wood, as compared with the Peach, occasional constriction might be expected.

To this, then, more than to the matter of stocks, I refer the dying-off of branches suddenly. Those who practically know the habits of the Apricot, must be aware that there are certain premonitory symptoms attendant on the dying-off of branches. In all cases that I have witnessed, a few huge and overfed shoots spring the year previous from below the destined portion. How is this? That the constriction, or induction, of the parts has already commenced, and, in consequence thereof, an inducement is held out to latent buds to push themselves into existence. I believe, too, it will be found that the more luxuriant young Apricots start during the first three or four years, and with this grossness an inequality in point of strength, the more they will be liable to such accidents. It will be found that equality in point of strength—or, shall we call it, like our great politicians, a proper balance of power—is most essential with the Apricot. All unequal grossness should have the finger and thumb, a preventive system, and this should begin in the nursery; indeed, the same may be said of many other fruit trees. But all this takes time, and the nurseryman ought to be permitted to charge more for such trees. Until the public can both discern and openly recognise these things, the evils we complain of must remain.

To be sure the cultivator has one remedy for grossness—he can root-prune; and this is right in principle, as my worthy coadjutor, Mr. Fish, has observed with some point. But the only fault in root-pruning is, that the innocent suffer with the guilty: the weak shoots suffer as much as the robbers; and, whilst one portion is reduced to obedience, the other is too weak to endure such a procedure. However, I say,—Root-pruning, with all thy faults, I love thee still!

As to soil, I do not think Apricots are over-fastidious: any good, sound, yet mellow loam, or really good garden soil,—good, I mean, in natural staple originally, not one choked with mere humus,—will satisfy Apricots, only let them have it fresh. I would much rather

plant an Apricot in a station which has been nothing but coarse grass and rubbish, than take up a worn-out Peach, or other fruit tree, and stick the Apricot there: worn-out stations will never do. I have not space here to say why, or else I think I could explain it easily. It is not, however, a mere question of excrementitious matter,—a doctrine never fully established,—but something else, that requires a short chapter by itself.

Let stagnation, however, be avoided by all means,—they will not endure it; and let there be no possibility of water lodging in the soil at any time. At the same time beware of a soil so incoherent, that when dry the wind can do as it pleases with it. Here we have the Scylla and Charybdis, and let our good friends beware of both. Apricots cannot bear to have their roots disturbed by every biped that thinks he can wield a spade. Take the country through, they will be found more steadily and certainly prosperous with a pavement over their roots, than with a bed of Cabbage or Celery; albeit, in the former case they get no muck, while in the latter they feed like hogs.

Before concluding these remarks, I would acknowledge the civility and justice of Mr. Fish, my worthy friend (see page 309, Vol. XX.), in stepping out of his way to offer what he doubtless thought a just tribute. Such honesty of purpose is, unhappily, now rare. Some men are like rooks, they steal sticks from each other's nests, without having the civility to acknowledge from whence they received them.

I certainly, without fear of egotism, feel assured of having been one of the first to insist pertinaciously on a due regard being paid to the roots of trees, and to show that, whatever the mode of training, it is all in vain, if things are wrong under ground. During the last twenty-five years, I have not ceased to urge this view of this subject. I must, therefore, thank Mr. Fish for his kind recognition: from such a quarter a little praise does one good.

R. ERRINGTON.

MEETING OF THE BRITISH POMOLOGICAL SOCIETY.

A MEETING of the BRITISH POMOLOGICAL SOCIETY was held on Thursday, September, 23rd, at St. James's Hall, ROBERT HOGG, Esq., Vice - President, in the chair.

The following were elected ordinary members:—Miss LOUISE CRAWSHAY, Caversham Park, Reading; E. ROSHER, Esq., 23, Hamilton Terrace, London; W.M. HEADLAND, Esq., 15, Princes Street, Hanover Square; JOHN LEA, Esq., 12, Chesterfield Street, King's Cross; W.M. HENRY GABBETT, Esq., Caherline House, Lisnagry, near Limerick; Mr. WILLIAM KEMP, Albury Park, Guildford; Mr. JAMES HOLDER, Nurseryman, Crown Street, Reading.

In accordance with a resolution of last Meeting, a Sub-Committee of five members was appointed to report on the qualities of the Pears to be exhibited at the Meeting on the 7th of October, and to report to the General Meeting on the qualities of each, the final decision to be made by the General Meeting. The Committee to consist of Mr. HOGG, Mr. RIVERS, Mr. G. PAUL, Mr. BOHN, and Mr. TAYLOR.

GRAPES.—Messrs. SPARY and CAMPBELL, of The Queen's Grapery, Brighton, sent bunches of the *Marchioness of Hastings* Grape. The bunch is nine inches long, loose, and shouldered, and the stalk stout, fleshy, and brittle. Berries green, covered with a thin grey bloom; an inch to an inch and an eighth long, and about an inch wide; oval. The flesh is soft, pappy, and watery, without any aroma; seeds from two to three.

Mr. SPARY stated his belief that this is synonymous

with the *Rhodian* Grape, and that he knew it was an imported variety. In company with this variety were bunches of *Black Hamburgh*, grown under the same circumstances in the same house; but they were far in advance of this variety in maturity, and infinitely superior to it in flavour. The opinion of the Meeting was, that the *Marchioness of Hastings* Grape has no property in regard of flavour to recommend it; but, being a large showy White Grape, may be grown for ornamental purposes in the dessert.

Several bunches of a Grape called *Lashmar's Seedling* grown against a south wall, at Denham, near Uxbridge, were exhibited by Mr. ARNOLD, gardener to B. WAY, Esq. They were perfectly ripe, and it was stated by the exhibitor, that it always arrived at maturity at this season. The bunch is about five inches long, with a long footstalk, and loose, having a number of small undeveloped berries. The berries vary in size, but the largest is not above five-eighths of an inch long; they are roundish oval, and of a green colour. The flesh is very watery, and, though without much flavour, is agreeable and refreshing. This variety is also known by the name of *Macready's Early White*, and *Blanche*; it received the name of *Lashmar Seedling*, from a person of that name, who lived at Rottingdean, near Brighton.

Mr. RIVERS, of Sawbridgeworth, sent bunches of the *Black Sweetwater*, ripened on a Vine, trained to a pole in the open air.

PEACHES.—H. G. BOHN, Esq., of Twickenham, exhibited a dish of *Violette Hâtive* Peaches, ripened on a standard in the open air, which, for flavour, were not inferior to those which, in some seasons, are to be obtained from the open wall.

Mr. PAUL, of Cheshunt, also exhibited specimens of the same variety; and *Noblesse*, from trees trained to stakes in the nursery quarters, which were well ripened, and of excellent flavour.

Mr. RIVERS, of Sawbridgeworth, exhibited *Noblesse* and *Royal George* Peaches, in excellent condition, to show the retarding powers of his hedge-fruit houses. The fruit of both was quite sound, and of fine flavour. He also had specimens of *Walburton Admirable*, a late variety, and of *Boudin*, the latter to show the marked difference there is between it and *Late Admirable*, with which it is frequently confounded. In Mr. Rivers' collection were also the following varieties of American origin:—*Crawford's Late Mélecoton*. This variety is yellow-fleshed, like an Apricot, and very red at the stone. In America it is considered one of the very best late Peaches; but, as exhibited, it is considerably acid, and decidedly inferior in flavour to *Walburton Admirable*, *Boudin*, or the retarded *Royal Georges*. *Cole's Large Yellow* is also one of the yellow-fleshed varieties, but of a very coarse flesh, and roughly acid flavour. This, also, is much esteemed in America; but, from the examples before the Meeting, neither it nor the former are sufficiently highly flavoured, even for late Peaches, to cause them to be considered desirable; further trials may, however, prove them to be worthy of cultivation. *Ward's Late Freestone* is of a different character to either of the former, and is a very excellent late Peach. It is about the middle size, and of a pale colour; the flesh is white and separates freely from the stone, round which it has a faint rosy tinge. This is a very good Peach.

Mr. PAUL, of Cheshunt, exhibited *Reine des Vergers*, from a wall. Its flesh was woolly, and not of good flavour. He also had *Crawford's Late Mélecoton*.

Mr. VEITCH, of Exeter, sent specimens of three varieties of *Syrian Peaches*. Nos. 12 and 14 were overripe; and, of No. 13, one specimen was very much over-ripe and void of flavour, while the other was not too ripe, but very acid. They were all grown on a south-east wall.

NECTARINES.—From Mr. INGRAM, of Huntingdon, were good examples of the *Stanwick Nectarine*, grown on a south-east wall, in a light sandy loam, over gravel. The fruit was not in the least cracked, and was the best example of well-ripened fruit of that variety that has yet come before the Society.

Mr. VEITCH, of Exeter, sent three varieties of Seedling Nectarines. No. 15, raised from the *Stanwick*, had a very bad flavour. No. 16 was entirely decayed; and No. 17, a clingstone, was sweet, but with a watery juice.

PEARS.—There were several very large collections of Pears, some being sent to have the nomenclature verified or supplied, and others for exhibition.

Mr. PAUL, of Cheshunt, brought about a dozen and a half of the new Belgian varieties, all very correctly named, and good examples of the kinds. None of them were quite ripe, and they were, therefore, ordered to stand over till the next Meeting.

Mr. WIGHTON, of Cossey Park, near Norwich, sent good specimens of *Beurré d'Amanlis*, *Brown Beurré*, and *Gansel's Bergamot*, the latter from west and south walls, and all well flavoured. A variety called *Marvel of Summer*, from a west wall, is *Belle et Bonne*, and a worthless Pear when compared with many others of the same season. His *Orange Bergamot* was *Autumn Bergamot*. The specimens of *Seckel*, from an espalier, were the finest ever seen by the Society.

Mr. JOHN BACHELOR, gardener to Mr. SHOOLBRED, Acton, sent a collection of twenty-six varieties, to be named, which were ordered to stand over, and were referred to the naming Committee.

JOHN ELLIOT, Esq., of Tresillian, Devon, sent a Pear, called in that district *Early Green Catherine*, which proves to be *Croft Castle*.

From Mr. UNDERWOOD, gardener to J. B. WILDMAN, Esq., Chelham Castle, near Canterbury, there was a very large collection of Pears, without names, that were referred to the naming Committee.

H. WEBB, Esq., of Redstone Manor, Red Hill, exhibited several varieties of French Pears, the names of which were incorrect, and the varieties unknown.

Mr. RIVERS sent *St. Michael Archangel* and *Jalousie de Fontenay*.

APPLES.—Of Apples there was a very large collection, all of which, being unripe, were ordered to stand over till next Meeting. Specimens of *Blenheim Pippin*, *Hawthornden*, *King of the Pippins*, and *Ribston Pippin*, from Mr. BOHN, were remarkably fine.

A variety called *American Codlin*, referred from last Meeting, to have its cooking properties tested, was reported upon by Mr. Hogg, who stated that he found it admirably adapted either for a pudding or sauce Apple. It has a very brisk and agreeable acid, but is not so desirable for roasting.

Mr. RIVERS exhibited *Cox's Pomona*, a large, showy, kitchen Apple, and also *Pitmaston Pine Apple Russet*.

H. WEBB, Esq., brought specimens of *Minchall Crab*, grown on the fullers'-earth formation of Surrey, and two or three other varieties, that were unknown.

PLUMS.—A Seedling Plum, raised at Gordon Castle, N.B., was sent by Mr. WEBSTER, gardener to his Grace the Duke of RICHMOND. This Plum is obovate, narrower towards the stalk, and marked with a shallow suture on one side; the colour is greenish-yellow on the shaded side, and orange-yellow, covered with numerous small dots, on the other side, next the sun. The flesh is yellow, coarse, and rather firm, but with a very good flavour.

Mr. RIVERS sent *Reine Claude de Bavay*.

NUT.—Specimens of the *Reigate Nut*, which has before been exhibited, and mentioned in former reports, was sent by Mr. VEITCH, of Exeter.

RASPBERRIES.—Mr. RIVERS exhibited a hybrid between the Blackberry and the Raspberry, which par-

takes of the flavour of both, and which has been noticed in previous reports. He also brought fruit of the *Yellow Fourseasons Raspberry*, excellent in flavour, and abundant in produce. This is the variety hitherto known as *Merveille des Quatre Saisons*, but which appellation Mr. Rivers asked the sanction of the Society to change in favour of the former, as being more simple and familiar to English tongues and ears.

STRAWBERRY.—*Sir Harry*, in excellent condition and in all stages of growth, from the bloom to the ripe fruit, was exhibited by Mr. UNDERHILL, of Birmingham.

The Council announce, that it is very desirable that no fruit be sent to Meetings in future in an unripe state.

GRIMSTON PARK, NEAR TADCASTER.

THE SEAT OF LORD LONDESBOUROUGH:

As our readers require us to give the history of the ways and means of getting to any place we may describe, I will tell how I got to this place. The starting point was from the ancient city of York, by the North Eastern Railway, to the station named Ulleskelf,—distance, a twenty minutes ride. I had then to walk to the entrance-gates,—rather more than a mile off,—on a level, pleasant, wide lane, on the side of which I noted one of the best-formed hedges I have seen for many a day. It was exactly formed like the letter A; consequently, every branch and leaf had its full share of light. There were no droppings of water, or shading, that could destroy the lower branches of the thorn. Close down to the ground the branches were as healthy as on the apex of the hedge, and so dense, that I think even a hare or a rabbit would have been puzzled to have got through. Just before I got to the entrance, I observed a complete arrangement of a home farm, and a substantial stone park wall, fully six feet high. A bend of the road had been taken advantage of, as a position for the entrance, so that the gates appeared to be placed in the centre of the road, terminating it, as it were. Outside, there is a broad green, with some fine old elms, giving an idea of a primitive age, when land was comparatively of but little value. I noticed on the left, inside the gates, which are simple and neat, a handsome lodge, in something of the Swiss style. It was of a good size, and ornamented with flower-beds and grass-plots. On the right is an ancient Church, in good preservation. The carriage-drive, from the lodge to the mansion, winds its way through the park, which was clothed with the richest carpet of autumnal grass I ever saw. I wonder the farmer had not taken advantage of this fine weather and made it into aftermath hay. The ground gradually rises towards the house, but undulates so much that the drive is often invisible in the hollow. On the righthand there is an ancient Mulberry, more than a hundred years old. Some ten or more years ago it was blown down on one side, but young shoots pushed up from the recumbent branches, and now the tree, though evidently old and decrepit, shows a green old age. It appears that this tree, together with some ancient Pears and Apples, are the relics of a former age, and formed part of a garden to an old hall, not a vestige of which (excepting these old trees) now remains. By this time I had reached the grand carriage-entrance to the mansion. It is a model of an Italian villa of the largest dimensions. The drive is straight, which shows off the noble portico to the greatest advantage. On each side I noticed what may be termed a grass garden. It was edged with rounded stone, and elevated above the general level. In the centre of these raised grass-beds there are two fine heads, or busts, raised, on pillars, to the height of an ordinary man. The gates are very handsome, and profusely gilded, as also are the arrow-shaped heads of the palisades. There is a lodge at each side of these gates, which are so small that the name—"Porter's Lodge"—is quite appropriate. As these are in sight from the grand entrance, and not more, perhaps, than a hundred yards off, it is quite right to make them of a subordinate character.

A private door on the right brought me to the conservatory, a plain parallelogram, sixty feet long and twenty-four feet wide. It adjoins the mansion, and there is an entrance from it into this conservatory. A spacious mosaic walk is

in the centre, and on each side I saw a goodly number of plants in pots, on the level, in full bloom. Mr. Richards, the intelligent gardener, told me that his constant study is to keep up a blaze of floral beauty in this place. I was particularly struck with some standard Scarlet Geraniums, from four to five feet high, with heads from two or three feet in diameter, in very fine flower. In front of them there were some fine double Balsams and dwarf Fuchsias. I also noticed some well-grown standard Mignonette plants, with three-feet stems, and heads just forming. By midwinter, these will be fine objects indeed.

In front of this conservatory, and to the west of the house, there is an extensive Rose garden, on turf. They are both in beds, and in single rows of standard trees. The single trees have a small circular bed, about two feet and a half in diameter to each, cut out of the turf. The soil is covered over with pebbles of an equal size. Mr. Richards informed me, that the soil here is so light and dry (the subsoil is limestone), that he is obliged to water plentifully in dry weather. The pebbles break the force of the water in the first place, and serve to keep the moisture in much longer. This light paving is, I think, a point worthy of imitation in a similar size. Beyond this Rose garden, there is a spacious circular fountain, with appropriate figures in the centre, which, when required, spout forth water, in jets, abundantly. A wood backs up this water-work with happy effect.

Turning to the south, I entered upon the garden front: there the Italian character of the mansion is more conspicuous. A row of pillars, of the Corinthian order, forms a pleasant promenade; and above that is a covered balcony, from which pleasant views are obtained of the country, as also of the beautiful flower garden directly under the eye. This was laid out by Mr. Nesfield, and is, in my opinion, one of his best. There is not so much of Box-beds and intricate tracing used here. Every bed and walk is edged with substantial stone edgings, which give a more solid and decided character. It is bounded from the park by a low wall, which ought, I think, to be balustraded, or formed with open work, so as to take off the appearance of confinement. From the balcony this is not seen so much as it is from the terrace walk close to the house.

There is a truly noble terrace walk, twelve feet wide and upwards, by four hundred feet long, passing through the flower garden, and terminating at the western end with two noble marble figures of lions, one attacking a horse and the other an ox. Truly terrific is the expression given by the artist to these two beast devourers. These are on each side of the walk, and direct in front of the vista is a magnificent Sycamore tree, upwards of eighty feet high, and a stem twenty feet in circumference. Passing under this fine tree, I found a winding walk before me, leading through a pleasant woodland scene. On each side I noticed some fine thriving Conifers, especially a Deodar, twenty-five feet high, clothed with its elegantly drooping branches and silvery foliage down to the turf; and, also, an equally fine *Cryptomeria Japonica*. In another part of the ground, I observed many fine-growing trees of the *Pinus Austriaca*, many of which differed greatly in the size of the foliage and in the shade of colour.

In part of the ground adjoining the winding walks, I noted dense masses of different kinds of *Hypericum*, the latter species behind, and the dwarf one (*H. androsaemum*), sometimes called *Rose of Sharon*, in front. Also, some beds, or rather patches of the Heath, in irregular forms, running out, as it were, from under the trees. These had a very good effect, but I must get out of this walk by informing the reader that it leads to another wide long terrace walk, which is called the Emperor's Walk, because it leads you between a row of pillars three feet and a half high, on each pillar being placed a bust, formed of the finest Italian marble, of a Roman Emperor. They are twelve in number, and are all named. At the far-end is a beautiful alcove, or temple, containing in its centre a very fine bust of the Emperor Napoleon the First. At the end you first come to, there is a fine figure in marble, supposed to represent Adam with the fatal Apple in his hand. Besides these figures, there are, in the flower garden, noble vases and figures of marble in profusion, rendering it a truly Italian scene.

Returning from the Emperor's Walk, and passing through the flower garden, the central walk terminates somewhat abruptly, without any apparent reason or cause. Now, some seventy or eighty yards further, there is an old, wide, and deep

excavation, I think this grand terrace walk ought to be extended to this excavated place, and that place should be formed into an extensive fernery, by forming irregular masses of rock-work, trickling rills of water, and gravelled walks, irregular in width.

A more interesting spot for such a purpose I have not seen anywhere. It is almost ready made for the purpose. There is an outlet from this place which leads to a large plot of ground, lately enclosed from the park. It is planted with Larches, Spruce, and Scotch Firs, as nurses for the finer kinds of Coniferous plants. The Araucarias appear to thrive here when so sheltered.

The collection of Conifers, however, is far from being complete. As they thrive so well, I hope that fact will induce the noble owner to procure every species hardy enough to bear the climate of Grimston Park.

My paper is nearly full, so I must cut my notes on the kitchen garden department into a small compass. The vineyards had been well furnished, but the Grapes were nearly all gathered. Here, again, as alluded to in a late paper, the gardener has found it necessary to lift up the Vines, drain them effectually, and reduce the depth of the borders.

Pines are not grown extensively, but those that are cultivated are very good. A proof of success I had in my hand. It was a true Queen Pine, and weighed six pounds within two ounces. Peaches were all over, but such crops of Pears I never witnessed, on the espaliers especially. Greenhouse and stove plants,—of these I saw many specimens, equal to any elsewhere.

The stock of bedding-out plants struck now, and ready for potting, was very extensive indeed. I have more matter, but I must conclude by assuring my readers, that a visit to Grimston Park and its beautiful pleasure grounds will afford them a treat indeed.—T. APPLEY.

NOTES ON NEW OR RARE PLANTS.

PENTSTEMON CORDIFOLIUS. *Benth.* Nat. ord., *Scrophulariaceæ*.—Native of California. Habit dwarf, pendant, straggling. Branches very slightly four-sided, smooth, shrubby. Leaves small, almost sessile, acutely cordate, entire, or distantly serrate. Flowers produced on numerous opposite leafy branches and branchlets. Peduncle short, glandular. Calyx deeply divided into five erect, acute, lanceolate lobes. Corolla almost cylindrical, straight, or slightly incurved; limb deeply two-lipped; upper lip linear, emarginate; lower lip divided into three obtuse lobes. Stamens longer than the tube, five in number, four fertile; the fifth sterile, and strongly bearded on one side. Style as long as filaments, surmounted by an obtuse stigma.

This is one of the most distinct species of this beautiful genus, and it well upholds the character of the genus as plants of ornament; but, from the smallness of its flowers, it is less showy than many other species of *Pentstemon*. As it suffers from the severity of our winters out of doors, it should be continued by cuttings in the same way as most bedding plants. It prefers a good strong loam, and begins blooming in August, and lasts till severe weather checks or entirely destroys it. Cultivated in pots, it makes an excellent autumn decorator for the greenhouse.

PLATYCODON GRANDIFLORUM. *Dec.* Nat. ord., *Campanulaceæ*.—Native of the East Indies. Herbaceous, with thick fleshy roots. Stems simple, from a foot to two feet and a half high. Leaves ovate, acute, sharply serrate, glaucous on both sides, but most deeply so on the under side. Flowers in a terminal panicle. Calyx of five short, obtuse, segments. Corolla widely campanulate, divided into five obtuse, ovate, lobes, of a beautiful dark blue. Filaments short, supporting oblong, whitish, anthers. Stigmas five.

This very fine plant succeeds best treated as an alpine. Good loam and peat, freely mixed with sand, are the best compost for it; and, placed in a cool shady place, it makes really a fine appearance in July, August, and the early part of September. But it will also succeed well in the most exposed places, and makes no mean show even there. It ought to be kept dry and perfectly at rest during winter. Propagated by division and seeds, which it ripens freely in this country.

ANDROSACE LANUGINOSA. *Wall.* Nat. ord., *Primulaceæ*.—Native of the Himalayas. An alpine plant, of procumbent habit. Branches slender, covered closely with silvery, woolly hairs. Leaves ovate, acute, entire, thickly set with close-lying, silvery hairs. Calyx inferior, five-cleft. Corolla funnel-shaped, with a spreading five-cleft limb, beautiful rosy pink. Stamens five, inserted on the tube of the corolla, short. Style short, filiform. Stigma obtuse.

A lovely little alpine, of moderately easy culture. The old plants are neither so vigorous in growth, nor so free in flowering, as young ones; it is well, therefore, to renew the plants annually from seeds or cuttings,—the latter are the least troublesome. It is perfectly hardy near London; but the small plants in pots should have the protection of a cold frame in winter. Loam, with a little peat, or leaf mould, and sand, suit it very well.

APONOGETON DISTACHYON. *Thunb.* Nat. ord., *Juncaginaceæ*.—Native of the Cape of Good Hope. Hardy perennial aquatic, with a corm or tuberous root. Leaves on long petioles, oblong, lanceolate, obtuse, entire. Spike two-parted. Bracts oblong, pure ivory white. Calyx none. Corolla none. Stamens twelve, situated in the axils of the bracts. Anthers black.

A very ornamental, hardy aquatic. It may be planted out in the aquarium, or cultivated in pots, and in either case a good strong loam should be used. Propagated by seeds, which it ripens freely near London. Flowering period, July and August.—S. G. W.

BEE-KEEPING IN DEVON.

MY friend, "A DEVONSHIRE BEE-KEEPER," having alluded to me in his interesting and graphic description of our transportation of bees (with hard labour), for six weeks, I hereby send, for the pages of THE COTTAGE GARDENER, a short account of my apiary, chiefly in connection with our mutual transference of hives to the heath. As he has already related the momentous incidents of the journey, I will not enlarge on that head, further than to mention, that my four hives were more difficult to remove than his, as two of them were doubled stocks, and one nadired on arrival at its destination.

I have eleven prosperous stocks, which are scattered in various localities. The four removed for this experiment, I shall, in contradistinction to my friend, name A, B, C, and D.

A is a single, flat-topped, straw hive,—a swarm in May, of this year, which, being very strong in bees, I nadired on our arrival.

B is a stock saved in the spring by joining two very weak hives. Driving was attempted in one of them, but the bees would not be driven, so without more ado it (a box) was placed on the top of the other (a straw hive). The bees joined pretty peaceably, and very soon manifested a decided improvement in activity. I have several times tried to remove the box, but in each case the queen was in it. I was, therefore, obliged to carry the united hives as they were. This shows the advantage of uniting weak stocks in spring, as two other hives, which seemed at that time equally strong, or weak, died soon after.

C is a box from which a beautiful super of 30 lbs., nett weight, of honeycomb was taken a week previously.

This hive is an invention of a relative of mine, and possesses much merit. I hope shortly to prepare a description of it for the pages of THE COTTAGE GARDENER.

D is a similar hive to A; first stocked with a swarm of 3½ lbs. on the 31st of May, to which was added a cast of 2 lbs., with a Stewarton octagonal box, as a nadir, on the 11th of June.

I now come to the results of our three opportunities of weighing:—

	Aug. 10.	Aug. 15.	Aug. 26.	Increase.
A. not weighed.	34½ lbs.*	40 lbs.		...
B. 34½ lbs.	35½ lbs.	40 lbs.	5½ lbs.	
C. 27½ lbs.	31½ lbs.	38½ lbs.	11½ lbs.	
D. 32½ lbs.	37 lbs.	40 lbs. 6 ozs.	7½ lbs.	

It will be seen that A was not weighed on its removal, the

* All these are gross weights, the weights of the hives not being known.

nadir just given rendering it rather difficult; but I have reason to believe that the total increase on the last occasion could not have been less than 9 lbs.

I may also remark, that the stock which has benefited the most is C, from which the thirty pound-box was taken, it being now most amply provisioned for the coming winter.

Of my remaining seven hives I was able to weigh but two, at the time of removing the others:—

H. on August 10th, weighed 37½ lbs.
" 26th, " 36½ lbs.
I. " 10th, " 38½ lbs.
" 26th, " 37 lbs. 6 ozs.

Thus losing 1 lb. and 1 lb. 2 ozs. respectively. This proves the advantage of removing hives to the heath. H and I being equally strong and prosperous, with A, B, C, and D, at the date first mentioned.

As none of my hives left in their usual quarters have increased in weight, since the latter end of July, and were consuming their stores at the time of removing four of them to a fresh pasturage; and as the heath was in full bloom weeks before, we may safely infer that the benefit of an EARLY removal to the heath is very great. "A DEVONSHIRE BEE-KEEPER" will, doubtless, agree with me in my belief, that the weather and the quantity of pasturage for three weeks prior to the 11th of August were all that could be desired; but since that date the weather has been unsettled, and unfavourable, and the heather blossom in a declining state. What, then, would have been the condition of our hives had we removed them three weeks earlier?

I shall be happy, at all times, to unite with my friend, in aparian pursuits, and in imparting the results of our experience to the readers of THE COTTAGE GARDENER.

I hope the foregoing imperfect remarks, in connection with the two papers from his pen, which have already appeared, may not prove unacceptable, and that before long we shall be able to record the return of our little exiles, and the final results of the experiment.—S. B. FOX.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

APPLES.

[D. signifies that varieties so marked are to be used only for the dessert; K. for culinary purposes; and C. for cider-making. Those marked K.D. are applicable either to culinary or dessert use.]

ADAMS' PEARMAIN, D.—Large and pearmain-shaped. Skin pale greenish yellow, tinged and streaked with red on the side next the sun. Eye open. Stalk half an inch long, obliquely inserted. Flesh yellowish, crisp, juicy, and sugary, with a pleasant perfumed flavour. A very handsome and excellent dessert apple. Ripe from December to February.

Alexander. See Emperor Alexander.

ALFRISTON, K. (*Lord Gwydyr's Newtown Pippin, Oldaker's New*).—Large, roundish, and irregularly ribbed. Skin light orange next the sun, greenish yellow in the shade, reticulated with russet. Stalk short and deeply inserted. Eye open, set in a deep basin. Flesh yellowish white, crisp, sugary, and sharply acid. A good bearer, and one of the best kitchen apples. November to April.

American Plate. See Golden Pippin.

Aporta. See Emperor Alexander.

Arbroath Pippin. See Oslin.

Arley. See Wyken Pippin.

AROMATIC RUSSET, D. (*Brown Spice, Burntisland Pippin, Rook's Nest, Spice Apple*).—Medium sized, conical, flattened at the ends. Skin green and russetty. Eye small. Flesh greenish white, richly aromatic. An excellent bearer. October.

ASHMEAD'S KERNEL, D.—Medium sized, roundish, and compressed. Skin greenish yellow and russety, tinged with brown next the sun. Eye small. Stalk short, and deeply inserted. Flesh yellowish, firm, crisp, juicy, sugary, and richly flavoured; of first-rate quality,

extensively cultivated near Gloucester, of which neighbourhood it is a native, and well deserving of more general distribution. November to May.

Astrachan. See White Astrachan.

Balgone Pippin. See Golden Pippin.

BARCELONA PEARMAIN, D. (*Speckled Pearmain, Speckled Golden Reinette*).—Medium sized, oval. Skin yellow in the shade, and a beautiful red next the sun. Stalk short. Eye small. Flesh yellowish, highly aromatic. Abundant bearer, and good dessert apple. November to March.

Bay. See Drap d'Or.

Bayfordbury Pippin. See Golden Pippin.

BEACHAMWELL, D. (*Motteux' Seedling*).—A small, ovate, yellow apple, of first-rate quality. December to March.

BEAUTY OF KENT, K.—Very large, roundish, flat and russety at the base. Skin greenish yellow, streaked with beautiful red next the sun. Stalk short, slender, and deeply inserted. Eye small. Flesh crisp, tender, and juicy. An abundant bearer. October to February.

BEDFORDSHIRE FOUNDLING, K. (*Cambridge Pippin*).—Large, roundish, and slightly ribbed. Skin dark green, becoming paler as it ripens. Stalk short, and deeply inserted. Eye open and deep. Flesh yellowish, and pleasantly acid. Handsome and excellent. November to March.

Bell's Scarlet. See Scarlet Pearmain.

BESS POOL, K.D.—Above medium size, conical, and handsomely shaped. Skin yellow, washed and striped with red on the side next the sun. Eye small, and rather deep. Stalk short. Flesh white, tender, and juicy, with a fine sugary and vinous flavour. November to March.

BLEHEIM ORANGE, K.D. (*Woodstock Pippin, Northwick Pippin*).—Large, round, and widest at the base. Skin yellowish, red next the sun. Eye open and hollow. Flesh yellow, sweet, and juicy. A first-rate dessert fruit, and excellent for kitchen use. November to February.

BOROVITSKI, D.—Medium sized, roundish, and angular. Skin bright red on one side and pale green on the other. Stalk long and deeply inserted. Flesh white, brisk, juicy, and sugary. Middle of August.

BORSÖRFFER, D. (*Garret Pippin, King George, Queen's*).—Small, oval, bright yellow, and red next the sun. Stalk short and slender. Eye shallow. Flesh yellowish white, crisp, rich, and perfumed. An apple of very superior quality. November to March.

BOSTON RUSSET, D. (*Roxbury Russet*).—Medium sized, roundish, flattened at the ends. Skin dull green, covered with brownish-yellow russet, rarely tinged with red. Stalk nearly an inch long, slender. Flesh greenish white, rich, sub-acid, and juicy, like Ribston. Of first-rate quality. January to April.

BRABANT BELLEFLEUR, K.D.—Large, roundish, oblong, and ribbed. Skin pale yellow, slightly striped with red. Eye large and wide. Flesh juicy, rich, and pleasantly sub-acid. November to April.

BRADDICK'S NONPAREIL, D. (*Ditton Nonpareil*).—Small, roundish, and compressed at both ends. Skin smooth, green, tinged with yellowish brown, brownish red next the sun. Eye small and deeply set. Stalk short. Flesh yellow, sugary, and aromatic. An abundant bearer, and first-rate table fruit. December to March.

Brandy. See Golden Harvey.

BRINGWOOD PIPPIN, D.—Small and round. Skin of a fine rich yellow colour. Eye small and open, set in a shallow basin. Stalk short and slender. Flesh yellowish, firm, crisp, juicy, and with a rich flavour. A first-rate dessert apple. January to March.

BROWNLEES' RUSSET, K. D.—Large, roundish-ovate, and rather flattened. Skin green and russetted, with brownish red next the sun. Eye closed. Stalk short, deeply inserted. Flesh greenish white, tender, juicy, sweet, and aromatic. An excellent late apple. January to May.

Brown Spice. See *Aromatic Russet*.

Burntisland Pippin. See *Aromatic Russet*.

CALVILLE, WINTER WHITE, K. (*White Calville*).—Large and flattened, marked on its sides with prominent ribs. Skin smooth, shining, rich yellow, and tinged with red. Eye small and deep. Stalk slender and deeply inserted. Flesh white, tender, sweet, and juicy. January to April.

Cambridge Pippin. See *Bedfordshire Foundling*.

CARLISLE CODLIN, K.—Fruit above medium size, ovate, and angular. Skin smooth, pale yellow. Eye closed. Stalk very short. Flesh white, tender, crisp, juicy, and brisk. An excellent culinary apple. From August to December.

CELLINI, K.D.—Above medium size, roundish, and handsomely shaped. Skin deep yellow, beautifully streaked and mottled with red next the sun. Eye large and open, set in a shallow basin. Stalk very short. Flesh white, tender, juicy, with a fine, brisk, balsamic flavour, and high aroma. A first-rate culinary apple, and also useful in the dessert. October to November.

Chalmers' Large. See *Dutch Codlin*.

CHRISTIE'S PIPPIN, D.—Rather small, round, and compressed. Skin deep yellow, mottled with red next the sun. Stalk short. Eye small. Flesh yellowish white, tender, brisk, and juicy, with a pleasant flavour. A first-rate dessert apple. December to February.

Claremont. See *French Crab*.

CLAYGATE PEARMAIN, D.—Medium sized, conical. Skin dull greenish yellow, with brownish red next the sun. Stalk medium. Eye large. Flesh yellow, tender, and richly aromatic, of the Ribston flavour. An abundant bearer, and first-rate fruit. November to March.

Clifton Nonesuch. See *Fearn's Pippin*.

Coates'. See *Yorkshire Greening*.

Cobbett's Fall Pippin. See *Reinette Blanche d'Espagne*.

COBHAM, D.—Above medium size, roundish. Skin greenish yellow, mottled with red. Eye small and closed. Stalk slender and deeply inserted. Flesh pale yellow, crisp, sugary, and aromatic. An excellent dessert apple, with something of the character of Ribston Pippin. September to January.

COCCAGEE, C.—Medium sized, ovate, fine yellow. Skin red next the sun. One of the best cider apples. October to December.

COCKLE PIPPIN, D. (*Nutmeg Pippin*).—Medium sized, conical or ovate. Skin fine brownish yellow, russety at the base. Stalk slender. Eye in a narrow and shallow basin. Flesh yellow, rich, and perfumed. Excellent flavour, and first-rate dessert fruit. January to April.

CORE'S GOLDEN DROP, D.—Small and conical. Skin yellow, with a few crimson spots next the sun. Eye small and open. Stalk long. Flesh firm, crisp, sugary, and vinous. A first-rate dessert apple. November to May.

Copmanthorpe Crab. See *Dutch Mignonne*.

CORNISH GILLIFLOWER, D.—Rather large, oval, and angular towards the eye. Skin deep yellowish green, tinged with red, intermixed with streaks of deeper red next the sun, russety. Stalk an inch long. Eye nearly closed, set in an uneven basin. Flesh yellow, firm,

rich, and perfumed, like the Clove Gilliflower. Rather a shy bearer, but one of "the best of apples." November to May.

COURT OF WICK, D. (*Fry's Pippin*, *Golden Drop*, *Knightwick Pippin*, *Phillips' Reinette*, *Wood's Huntingdon*, *Weeks' Pippin*, *Yellow Pippin*).—Rather small, roundish, ovate, and compressed at the ends. Skin greenish yellow, orange and russety next the sun. Stalk short and slender. Eye open and shallow. Flesh deep yellow, juicy, and highly flavoured. An abundant bearer, and first-rate fruit. October to March.

COURT PENDU PLAT, D. (*Garnon's Pippin*, *Princesse Noble Zoete*, *Russian*, *Wollaton Pippin*).—Medium sized, round, and compressed. Skin rich deep red, greenish yellow in the shade. Stalk short and deeply inserted. Eye large and open, set in a wide shallow basin. Flesh yellow, rich, and briskly acid. An abundant bearer, and excellent fruit. November to April.

(*To be continued.*)

FUCHSIAS.

I AM much obliged for your list of Fuchsias. I see by it that there are very few any better than those I already possess. In those with white corollas, you have omitted the only one (save *Mrs. Story*) worth growing, viz., *Princess Royal*. This is by far the boldest and best, but I hope that growers will yet produce one with a whiter and larger corolla than any variety now out. All you have enumerated are crosses, you say, from the Mexican. Is it not very surprising that some fine kinds have not been produced by crosses with *serratifolia*. —AMATEUR.

ARTIFICIAL COMB FOR BEES.

REFERRED to a paragraph upon this subject, which was copied from an American paper, and which appeared in THE COTTAGE GARDENER of the 14th ult., I fully agree with what is there stated, respecting the large quantity of honey consumed in the production of wax, and the consequent saving in labour to these industrious insects which would result from their being furnished with ready-made combs. Any one, who has even cursorily examined a clean and empty piece of comb, and remarked the extreme beauty and delicacy of its construction, will probably coincide with me in the opinion, that to manufacture an artificial substitute would be a task of extreme difficulty, if not absolutely impracticable. It has, however, occurred to me, that if thin sheets of wax, of the requisite dimensions, could be formed, and attached to comb-bars in the same manner as guide-comb, it is very possible that the bees themselves might fabricate them into comb, and thus readily attain the desired result.

The advantages of this process (if successful) would, of course, be limited to saving the little artificers the labour of collecting the large quantity of honey which I believe to be consumed in filling a hive with combs, as well as the time required for the secretion of wax, during which process they remain, according to Dr. Bevan, "in a state of profound inactivity about twenty-four hours." The elaboration of the waxen sheets into comb may, perhaps, be taken to equal in point of labour the construction of combs from their foundation in the usual way.

It is, of course, very possible that the bees may decline to accept the proffered assistance; but it appears to me that there is sufficient probability of success to make it worth trying. I confess that at present I do not know any ready means of preparing thin waxen sheets of the required size—say, eleven inches by eight inches—and substance (I fancy they should be about the thickness of cardboard); but it is possible that some among the multitudinous readers of THE COTTAGE GARDENER may be able to instruct me, in which case I shall be happy to submit my theory to the test of experiment at the earliest opportunity.

I should be very glad if other correspondents of THE COTTAGE GARDENER would oblige me with their opinions on

this subject; and any hints as to the best mode of forming the proposed waxen plates, communicated through its pages, will be esteemed a favour by—A DEVONSHIRE BEE-KEEPER.

GRAPE GROWING.

I HAVE just been reading an article written by Mr. Appleby, who, after a preface, which must be familiar to every good gardener, goes on to say, that he saw some vineyards, belonging to Mr. John Meredith, of Garston, near Liverpool, and that in no other place is the Vine so largely cultivated, or so successfully brought to a bearing state in so short a time.

Surely Mr. Appleby could not have been in the habit of visiting many gardens in the country, away from Garston, or he never would have made such an assertion. It is quite a libel on English Grape growers. Let me recommend him to go the gardens of Isaac Harrison, Esq., of Belgrave, near Leicester, and inquire for Mr. Henry Baker, the respectable and intelligent gardener there, who I think will show him such a house as, perhaps, he never saw before, and the Vine as largely cultivated and brought to bearing in quite as short a time as those at Mr. Meredith's. There is one house, sixty-four yards long by twenty-two yards wide, planted with Vines,—inside, of course; he will see some Grapes grown there, and many other places besides. Why, there is Sir George Goodman's gardener, Mr. Heywood, of Roundhay, near here, can show him some bunches of Grapes worth looking at, if he can find time to come and see them, and they are not all cut. As to getting a Vine to bear fruit in two years, that is easy enough to be done.—H. DUNCAN, Leeds.

EDGING PLANTS, BEDDING PLANTS, AND MULING.

ONE of our correspondents on the east side of London asked about a rare bulb last winter. The name of the bulb is *Gastronema clavatum*, which blooms very much like a large white Crocus,—if the white of the Crocus was striped regularly all round with crimson stripes, rising from the bottom of the flower. Our friend bought his bulb, by that name, from a first-rate London house, and he kept it in the greenhouse for the last five years without seeing a blossom on it; then his patience could bear it no longer, and he wrote about it. The description he sent would not tally with the name, and, on learning that he sent a small bulb, I found the little bulb told its own tale,—a pitiful tale it was, too. An evergreen bulb, which is more hardy than the Scotch Crocus, was treated, for five long years, like a most delicate South African bulb.

An evergreen bulb requires water all the year round, if it is in a pot; and four or five times more water during the summer months than for the rest of the year. But *Gastronema*, for which this bulb was bought, is not an evergreen bulb, and requires no water at all after the summer sets in, so that the difference in the treatment must have been very hard indeed on the evergreen subject, which, I believe, was stated last spring to be an *Argyropsis*,—the *Zephyranthes candida* of our books and bulb lists. The little bulb had two leaves on when I had it last spring. It has now sixteen leaves, and if the correspondent will send me his address I shall be able to send him a flower of his bulb, as it will probably go on flowering in my border till after Christmas.

There are three reasons why I mention this bulb. The first is, that it would make a far better edging to a bed of *Tritoma waria* than the other bulb, which I recommended for the beds at Kew, the *Tritonia aurea*. Why it is better is, that it remains evergreen, and that the leaves take no hurt in winter, nor take up more head-room than the bulbs occupy below, as they are stiff, and not unlike those of Jonquill, only not so tall. After it is once established, it will bloom from May to October, as white as the driven snow, and in wonderful abundance where the soil suits it. But it will do in nine places out of ten where *Tritonia aurea* would fail, as the latter is so thirsty that, unless it has a moist bottom, and is partly shaded from the sun, the flowers soon fade, and the leaves get the red spider; but none of these ailments ever affect the *Zephyranthes candida*. However, it will not bloom freely, or hardly at all, on chalky land.

The second reason for mentioning this bulb is, to record the first instance of its having attempted to seed in Europe without artificial impregnation, as far as I am aware, although it has been in cultivation nearly thirty years. It will readily seed, if it is touched with its own pollen, but will not take the pollen of any of its nearest relations. The question is, therefore, did the five years mistreatment alter its constitution so far as to make it naturally fruitful on regaining its liberty? or was it that it had too much room, or good soil, or indulgence, when it failed to seed with me formerly? Has it been seen to seed spontaneously elsewhere?

And, thirdly, I mention this bulb, because as it is as hardy, or more so, than the Crocus,—flowering and seeding at the beginning of winter, when it is covered with snow, or held firm in the frost,—and increases as fast as the Crocus, there is no reason why it should not be sold as cheap as the Crocus, except that it is not asked for in the trade, to make it worth the trouble of growing it in quantities. All Lily-like plants, as Gladioli, Tritoma, and the Japan Lilies, ought to have the beds for them edged with some other Lily-like plant. Even an American bed of Rhododendrons, Kalmias, and such like, where most of the Lilies do better, or, at least, look better, than simply by themselves, ought to be edged with this very plant. How much more in character those American-beds at the Crystal Palace—in which they flower so many of the Japan Lilies—would look, if they were edged with *Zephyranthes candida*, in broad bands,—say, a foot across,—and as close together as their cylindrical and rush-like leaves could stand. These bands would be loaded, most part of the summer, with the purest white flowers, after the manner of white Crocuses. In very dry seasons, such as this and the preceding summer, these argentine bands would probably rest from flowering during the hottest periods; but then their leaves would hold up as firm as ever; and there is not another bulb in cultivation, whose looks and style of growth is more perfectly architectural, or symmetrical.

I would engage to increase my stock, from that little bulb which I received last spring, to 100 plants in three years; and, if I had a demand for all I could rear on an acre of ground, I could well afford to pay £30 rent for that acre, and sell the bulbs at one penny each; and any nurseryman could make a good living of *Tritonia aurea* at twopence the "root," if he had sale enough, from half an acre of it. Therefore, instead of drawing me before the Lord Chancellor, or under petticoat government, for wishing these beautiful plants to be had so cheap, and for telling how they could be so managed, and also for giving the wrong scent, in order to make a "cry" for them, I ought to get a first prize for every attempt of the kind.

The next subject, to bring up the arrears of the last few weeks, will be from a yearly report which is sent in by one of the most successful cross-breeders in the country, with some observations of my own, drawn from a long experience in the same field.

The report begins with *Daveyanum Geranium*, a seedling, which was sold, in 1822, for a couple of guineas. It was about the first Geranium I ever saw crossed, by the late Lady Gordon Cumming, after whom the bulbs *Cummingia* are named. I believe no one ever obtained a seed from that Geranium till this season, and I have only two seeds now. "One is up, and another is in." It is a strain of purple, a colour we want most particularly for beds, to balance our excess of scarlet kinds; and a perpetual bloomer. Let us hope a run of it with stouter petals.

"Old *Pavonium* seedling up." This is another of the good old kinds of Geraniums; a different strain, which was lost in the hurry of the florists to get rich.

"*Delphinium sinense*, crossed with *Delphinium grandiflorum*, up and growing." Very good news. Depend upon it, this is what we must all come to at last, for blue bedders. You shall have them some day as compact as Calceolarias, and as blue as blue bottles.

"Two double seedlings of *Delphinium sinense*, this season, and a much improved lot of single-flowered seedlings of it. I enclose seed from this improved breed for your Experimental Garden." I think I saw a double *sinense* long ago, when the kind was supposed to be an annual, and it was allowed to die out in winter, as the rest used to be, in those days.

"*Begonia parviflora* (Dregei), crossed with *Begonia sinabarin*, a true and undoubted bedder, of great beauty."

What will the natives say of a bedding Begonia? *Parviflora* is the smallest of that race of Begonias, and is almost a perpetual bloomer all the year round. *Cinnabarinus* is the most difficult of the race to do well:—is also one of the most beautiful flowers of them all, and is half its time at rest. But there is no question about the “great beauty,” and “bedder.”

“Turned out a *Pitcairnia* seedling, in hopes of killing it. Grows like a Cabbage. Fancy a bed of such things.” There are more bedders in the dry stores of botanic gardens, than in the cold pits of the nurseries; that is, summer bedders, which, however, are not so gay as ours.

“Have new heaps of the new *Unique* races, of all tints and dispositions. One, quite new in appearance, flowered yesterday, for the first time. The white *Uniques* will, I fear, be gross and leafy. The *Quercifolias* are much better; one of them, a pure red or scarlet, will be a bedder. Lots of pale *Sidonias* up.” Early this season, and once last summer, I gave it out,—for the guidance of young amateur cross-breeders,—that they had no chance with the *Uniques*; that they were already so far improved, that none could overtake this very collection of them. The same with the true *Sidonias*, but the French have made a fine thing of the *Sidonia* breed. The new colour, which came out at the shows last May, was got from *Sidonia* blood. The same colour appeared for the first time among my own seedlings, otherwise I should never guess how they got into that strain. There was a beautiful flower in the first breaking up of the *Sidonia*, three or four years back, which no one could strike from cuttings. The best London propagation failed to increase it. Let me have it for the Experimental, and, if I cannot make a plant, I will spoil a cutting. I received one cutting of it last May, and towards the end of August it showed signs of life, and now it is coming into bloom. The experiment is very curious, and well worth minding. Years ago I insisted on it, that no method was so sure as the old way, described by Miller,—to put cuttings of all kinds of Geraniums out in the full sun, to shade the very weak ones for a while, and then to give them Italian climate, if it could be done. I planted this cutting, after travelling a long distance, two feet from a south-west wall, in the Cocoa-nut fibre, and put four panes of 6-inch glass round it, making a glass square, six inches on the side, just like the bottom of a handglass, without the top, the cutting being in the centre, with two leaves only. I put a piece of slate across the square, every day the sun was out, for a month; by that time the leaves got so accustomed to the light, air, and enormous heat, that they could do without covering. June was awfully hot, but no sign of life or progress. July was touchy weather,—sometimes too much rain, and little sun, and the reverse,—but no progress in the experiment. But the steady, uniform heat of August brought on a change, and at the end of the fourth month the cutting was rooted, and I hope to see the blossom ere long. Every plant and seed I receive for experiment, I am bound in honour not to give away to any one.

The report goes on—“*Baron Hugel*, crossed with white *Nosegay*, is a failure for bedding, but beautiful in a pot.” So you see pot plants are looked for nowadays, just as much as bedders in the same class. The reason why *Baron Hugel* fails in good dwarf bedders I learnt to my cost,—it has no pollen, and it was a sport. I saw it go back to its original type at Claremont. I had 600 seedlings from it by the first breeders in my stud, not one of which was worth a straw. In the scarlet Geraniums, the habit always goes after the pollen parent, and if the mother is not strictly a cross, she may be as dwarf as the *Golden Chain*, and the pollen parent even more dwarf, yet the seedlings will take after the freak which produced the mother.

“Crossed *Mangles'* and *Tom Thumb* seeds, all without germ.” This is one more beyond my reach. I never got a crossed flower of *Mangles'* to set; but I had a bed of a seedling from *Mangles'*, two years rising in the fountain garden, at Shrubland Park. The flowers were twice the size and substance of those of *Mangles'*; but the plants seeded so much that they were troublesome to keep tidy; yet I failed most completely in getting any other pollen to act on them.

“*Golden Chain* crossed with *Tom Thumb*, good seeds ripe.” The same rule which spoils the seedlings of *Baron Hugel* applies here also. The *Golden Chain* is a sport from *Inquinans*, the original plain-leaved kind, from the Cape. Sports may

come from sports, but I do not know an instance to encourage the sport of breeding from sports.

“Four variegated seedlings from *Flower of the Day*.” This plant will reproduce as many *Annies*, *Attractions*, *Mountain of Lights*, and *Countesses of Warwick*, as you please. I once fell into the error of supposing the *Flower of the Day* to have been a sport. If it was a sport, it could not produce such offspring; but Mr. Kinghorn assured me since, that it was a genuine seedling of his own raising. The report confirms the statement.

“The new *Zelinda Dahlia* (*Coccinella*) is in bloom, about the size and height of *Tom Thumb* Geranium.” One plant of *Coccinella* reached the Experimental Garden on St. Swithin’s day, and will not bloom this autumn.

“*Hautbois* Strawberry, crossed with Myatt’s *Queen*, plants up. *Black Prince*, crossed with ditto, up also. Keens’ Seedling, crossed last year with the *Hautbois*, will fruit next summer, the seedlings taking the habit of the *Hautbois*, the male parent. *Black Currant* crossed with *Ribes sanguineum*; seeds apparently good, but did not germinate; try again.” We often hear of crosses by *Hautbois*, but never see fruit that will second the reports.

“An original *Fulgidum* cross, almost identical with *Ignescens*, seeds like a Groundsel.” This is the best news of all. It was at this stage of the *Ignescens minor* that the florists lost sight of the *Fulgidum*, or clear scarlet strain of Pelargoniums.—D. BEATON.

QUERIES AND ANSWERS.

GARDEN FOUNTAIN.

“I am desirous of having a fountain in my garden, and will thank you to tell me if my plan is feasible. We have water supplied (by a water company) to our bedrooms, kitchens, &c. I want to have a fountain not far from the kitchen hall, about twelve feet. My plan is to have a basin made of cement, surrounded by rockwork, and the jet to issue from the centre of the basin. Will the water rise without my having a tank above the level of the garden,—that is, will the same force that carries the water to the bedrooms be sufficient to work the fountain? Also, if it does, would a hose attached to the fountain-pipe, in room of the jet, throw water over the garden?”—KATE.

[We do not recommend any work to be done in cement, which is to be exposed to the weather, after the middle of September, to the end of April. There is no difficulty in making the basin and fountain as you propose; but the force of the jet will be according to the height of the reservoir of the water company above your fountain, as also the force to distribute the water over the garden. But you might ascertain the latter force by fixing a short piece of hose or tubing to one of the taps in the kitchen, or back kitchen, or yard.]

GROWING LILIUM LANCIFOLIUM IN A POT.

“Knowing that the flowers of my *Liliums* (*lancifolium*) at the Crystal Palace Show,—kindly noticed in your this week’s (Sept. 21st) notice to correspondents,—were good, but did not obtain a prize for want of being ‘in a lump,’ I do not intend next year being defeated from such a cause, if I can help it. As my bulbs are now only one in a pot, will you inform me whether I should take each out of the mould and pot them with others into larger pots (present size 16’s), or whether I should allow them to remain as they are until the spring, and then remove into larger pots without disturbing the mould, adding others in fresh mould round the space between the old mould and the large pot? Also, whether I should, in either case, repot and plant them now, or wait until the spring?”—WILL. WORTH.

[Any time in November is the best season to repot the Japan Lilies, and if you mean to make a sensation, and take an extra first prize, you must put fifteen of the very largest bulbs in one lump. In short, the exhibition Lilies are on a wrong principle altogether. You are the only exhibitor who put them on the right plan—one in a pot. The test of merit ought to be, who can produce the finest leaves, the largest flowers, and the thickest stems, in the smallest pot,—one bulb in each. A small 32-pot, or a large 48-pot, in good hands,

will produce the largest bulb of these Lilies in the highest perfection. We have seen them thus in the Kingston Nursery, this season, by hundreds. Also, three bulbs in such pots, the bulbs flattened to the side of the pot, for want of room, and nothing could be finer. They seemed to live on the watering alone. Shake off, very carefully, as much of the mould as will not stick to the soft fleshy roots, whenever you repot these Lilies. But they do not require to be often repotted after they are of good flowering size,—once in three or five years is quite often enough.]

VALLOTA PURPUREA—COCKSCOMBS.

"The *Vallota purpurea* has generally seven or eight blooms on a head with us. A good-sized bulb sends up two flower-stems, each containing eight flowers. I had one this year with nine flowers on one head, and another strong flowering-stem pushing up. These were bought as *Vallota purpurea*, with no *major* to their name, though Mr. Beaton, in THE COTTAGE GARDENER for September 21st, says the common *Vallota* has never more than six blooms.

"I should be grateful for information as to how those splendid *Cockscombs* were grown, which were shown at the Crystal Palace, September 8th and 9th, as we are unable to succeed in obtaining heads above a few inches long." — EXCELSIOR.

[The common *Vallota* produces, generally, five flowers on a head, and a very good bulb has six, and sometimes seven and eight; but the last two, which are centrifugal, as often perish in the bud as come to perfection. Your *Vallotas*, therefore, are out of the common, and show that, by an uncommon good attendance, *Vallota purpurea minor* may be made to produce as many flowers on one head as the *major*; and, when that is the case, the latter has only the advantage of size and brilliancy in the individual flowers. But the most extraordinary thing about these *Vallotas* is, that there is not the slightest botanical or natural difference between them and *Cyrtanthus*, which has the flowers in narrow tubes hanging down from the top of the spathe.

We, too, as well as the Horticultural Society, would be pleased to know how to grow *Cockscombs* like those you refer to; but, if you had seed of a good kind, there is no great difficulty in getting good ones. It is a spring question.]

WALL BORDER AND FRUIT TREES TO PLANT ON IT.

"A SUBSCRIBER," residing on the low, marshy lands which border the river Thames, asks for advice on the training of some fruit tree borders he has recently made, and also what description of trees to plant there. It is well he has named draining, as it is likely to be wanted, the soil being a stiff clay. Now, presuming the wall to be new; and, by the sketch he has sent, it contains all aspects,—that is, if trees be planted on both sides,—which, in the absence of information to the contrary, we take to be the case; and the wall being 106 feet long, and ten feet high,—we will treat it as being double the length mentioned, and being likely to be planted on both sides. But first of all the draining must be done, which process demands some little attention.

Assuming the locality to be one of those dead flats whose surface is nearly an exact level, and but little elevated above high-water mark, deep draining cannot well be performed, as there will be a difficulty to get rid of the water. Drains, therefore, a moderate depth—say, three feet—will do. Be sure to put in plenty of them,—about six or eight feet apart will not be too close; and, as this is not an expensive affair, it had better be done securely at first; and care should be taken that the outlet does not get choked up. The draining being accomplished, the border soil may be seen to. Generally, the surface soil in such places as the vale of the Thames is very good; therefore, it need not be deeper than eighteen inches, or two feet at the most, provided the bottom be a sound, healthy clay; the deepest soils are wanted above a hungry, unproductive sand or gravel. Clays generally retain the manurial substances in greater abundance than sands or gravel, and, if not too retentive, are useful as conservators of

all that is useful. Assuming this to be settled, we now come to the width required for the use of the wall trees.

Wall borders are too often ill-treated. A good fruit crop is always expected, or wished for, and too often a heavy vegetable one at the same time. The temptation to plant early vegetables on such a border is too great to be resisted, and the trees are injured in consequence. But, as it is impossible to avoid this evil, let the border be made about twenty feet wide, or more; and set off a portion of six feet nearest the wall for the express use of the wall trees, but do not plant anything else within this boundary. This being settled, the trees must next be seen after, or rather the sites for them pointed out.

The wall in question having four returns in it, of eleven and twelve feet each, these portions, though small, must be sites for one tree each. The other portions of the wall, a thirty-three feet length, and a twenty-seven feet, will allow of two trees on each face, which, in all, will make sixteen wall trees. If the wall be planted on both sides, which, perhaps, is not the case, but assuming it to be so, it is only necessary to mark out the spot for each tree; and, if the border be likely to be very damp, I would advise the six feet next the wall to be concreted at bottom,—say, eighteen inches from the surface; and let the concrete fall from the wall that distance, and have a drain there to receive the water. But, if the border be not very wet, this may be dispensed with, and the ordinary soil, if fresh, will do pretty well for all kinds of trees, without any manure. But, if the soil be exceedingly stiff, river, not pit sand, may be added in liberal quantities, to make it more porous. Brick-dust will also do, but lime is not exactly suitable for the Peach and other stone fruit.

The border being in readiness, there remains nothing now but to arrange the fruit trees that are most likely to be wanted, and, as there will be aspects of all the four kinds, they may be planted somewhat thus:—

On the south side.—Peach and Nectarine.

On the west aspect.—Apricot.

On the east aspect.—May Duke Cherry, and Washington Plum.

On the north side.—Morello Cherry, and any hardy Plum. A tolerable good selection may be somewhat as follows:—

PEACH.—Violette Hâtive and Red Magdalen.

NECTARINE.—Newington and Elrige.

APRICOT.—Moorpark and Musch-Musch.

PLUM.—Washington, Golden Drop, Green Gage, and Goliath. The last-named for a north wall.

CHEERIES.—Mayduke for east or west aspect, and a Morello for the north one.

Peaches and Nectarines will also do on east and west walls; and, if two trees of each be not sufficient, add *Grosse Mignonne* and *Late Admirable* Peach, and *Red Roman* and *Duc de Tello* Nectarine. The *Jefferson*, *Royal Dauphin*, and *Orleans* Plum may also be planted on the north walls, if those above do not occupy the whole. But I should observe, that 200 superficial feet of wall is not too much for one tree, and it is not advisable to plant too closely. Pears might also be planted, if thought well of. But, as many of the most popular fruits of these are better flavoured when grown as standards, in the south of England, they are not advised as wall trees here; and, as a Pear requires a much larger space on a wall than any other fruit tree, it is better to have other fruit when walls are scarce. An odd corner may often be usefully employed in ripening Tomatoes; or, if on the back wall, red or white Currants may be grown, and if matted up will keep a long time,—this depending on the tastes or wants of the party in occupation.—J. ROBSON.

REGULATING A GREENHOUSE FIRE.

"I have a small greenhouse, heated by a flue, which I find extremely tiresome on account of the fire burning out too quickly. The furnace is lighted from outside the house, somewhat below the level. The chimney is lofty, reaching to the parapet of my neighbour's house, in fact forms the end of the back wall, and, therefore, does not appear an eyesore from the garden. I think that the height of the chimney may be the cause of the great draught. The furnace is enclosed by a trap-door. Would keeping that shut be the means of reducing the draught?" —T. S.

[Shutting the trap-door will help you. Never mind the

height of your chimney; be glad you have such a draught. You may regulate to a very nicely, by having a close door to your ashpit, and an iron damper across your chimney in the most convenient part. When the fire is lighted and burning, the damper will allow you to regulate the draught to a very nicely, more especially if little or no air is admitted by the ashpit door.]

PACKING FRUIT FOR TRAVELLING.

THE following judicious directions have been published by the Pomological Society:—

“Fruit should be protected against injury from pressure, by being packed in boxes or stout baskets; very light baskets, and frails, are frequently used, and damage more or less is invariably the result.

“Against injury from shaking, or turning over, it should be guarded,—Firstly, by using cases of moderate dimensions in every direction, or larger cases with partitions in them, that there may not be too great a bulk to move about within the package; secondly, by laying the separate articles so closely and compactly together, that they shall just keep each other steady, without crushing: This last is, perhaps, the most important matter of all,—no fruit suffers so much as that which is loosely packed. Common sense, of course, dictates, that in packing soft and solid fruits in the same case the latter should be laid in the bottom; if, however, the box is turned upside down on its journey, this arrangement becomes valueless; and, to guard against such casualties, horizontal partitions of thin deal should be dropped into the box between layers of soft and solid fruit, and secured in their position by nailing or otherwise.

“Fruit is also frequently damaged in flavour by being packed in moss, brown paper, straw or hay chaff, or other substances which impart their aroma and flavour to all delicate and absorbent fruits which are surrounded by them. If such materials are used, the fruit should first be separately enclosed in tissue, cap, or writing paper, cotton wool, leaves, or other scentless material.

“The bloom of certain fruits is best preserved if they are packed in young nettle-tops, partially dried. Stout cartridge paper is also excellent for the purpose, as it keeps them steady, without pressure upon more than a small portion of their surface, and its stiffness prevents crushing.

“Pine Apples travel with least injury to the crown if folded up in a piece of stout cartridge paper, and firmly, but not tightly secured by matting.

“Grapes carry best if tied down to the bottom of a shallow box, in the manner first used by Mr. Fleming, of Trentham, at the London exhibitions. The next best method is to enclose each bunch separately in a piece of stout cartridge paper,—folding it up somewhat like a grocer’s pound package of sugar,—and placing them as close together in a box as they will lie without crushing.

“Melons should be enclosed in cap paper, placed in a box, and surrounded by chaff, bran, or dry sawdust.

“Peaches, Nectarines, and Apricots should be carefully enclosed in a piece of tissue paper, and kept separate from each other by cotton wool. The two former should always be accompanied by leaves; and information should be sent as to the size of the flowers,—whether large or small.

“Plums, when the bloom is important, should be rolled up, six or eight together, in a piece of cartridge paper, and tied round with matting. When the bloom is not important, they may be packed in Strawberry, or similar leaves. The first should always be accompanied by leaves and wood.

“Cherries, Gooseberries, and Currants travel very well under general circumstances, if laid together in small shallow baskets, or punnets, covered with leaves, and tied over with paper.

“Strawberries, Raspberries, and Mulberries should be packed in shallow boxes or punnets, each fruit being separately surrounded by one or two Strawberry leaves.”

NURSERYMEN’S CATALOGUES.

We have received the following:—*A List of Bulbs and other Flower Roots, by E. G. Henderson and Son, Wellington Road, St. John’s Wood.* This is something more than a

mere “list;” for, besides its comprehensiveness, it is interspersed with copious and judicious remarks on the cultivation and arrangement of these plants in the flower garden, and with ample descriptions of the different varieties.—*A Descriptive Catalogue of Selected Roses, by John Cranston, Kingsacre, Hereford,* embraces all the best varieties, and contains very excellent descriptions of their colours and characters.—The same may be said of the *Descriptive Catalogue of a Selection of Roses, by Adam Paul and Son, Cheshunt.*—The *Catalogue of Fruit Trees, by W. J. Epps, of Maidstone,* is well arranged, and is, in fact, the plan of the Horticultural Society’s Catalogue, applied to the lists of fruits cultivated in the Bower Nurseries, at Maidstone.—We have also a *Catalogue of a Selection of Fruit Trees, by A. Paul and Son, Cheshunt.*

[We shall, from time to time, insert in this way, notices of the catalogues sent to us by the nurserymen advertising in our columns.]

TO CORRESPONDENTS.

KAISHA APRICOT (C).—We are obliged by your directing our attention to the editor of the *Gardeners’ Chronicle’s* remark, appended to a paragraph on “the *Kaisha Apricot*,” which appeared in a recent number of that paper. By many it is considered that the tendency of that remark is to throw discredit on the decisions of the Pomological Society. We do not think it is. The *Kaisha Apricot* is, doubtless, a very good Apricot, and, in the report referred to of the Society’s Meeting, nothing is said to the contrary; but it says that two kinds of that fruit were exhibited, one of which, being unripe, was found to be mealy and pasty, and the other, which was highly ripened, was “much more juicy and highly flavoured.” The Society very properly deals with fruit as it is before them, and not as it might be if produced under different circumstances; and so long as the Society continues to act entirely on the evidence before them, and not on hearsay opinions, so much more highly will their judgments be estimated. We think, therefore, that the editorial remark will be considered by all sensible men as exceedingly trifling and groundless; and tending to exhibit far more want of judgment on the part of the writer, than to throw any discredit on the judgment of the Pomological Society.

CLUB IN BROCCOLI (F. C. T.).—When the young plants are old enough to handle, take them up, and, with the thumbnail, pinch off the enlargement caused by the grub, and rub them with wood ashes. Let the plants be pricked out on good, well-prepared ground, and usually they will out-grow the effects of the attack. Lime, sot, charcoal, or wood ashes, are also good preventives; and in winter, or when the ground is under some other crop, a moderate salting will rid the ground of these pests. But the Cabbage tribe does not benefit much by salt,—on the contrary, it suffers by its application.

POND LEAKING (A Subscriber, &c.).—You should have told us how you made your pond. For neatness, efficiency, and ultimate economy, nothing is better than bricks, laid in Roman cement. If you coated all over with the same, you could give it a rustic appearance, by sticking in flints and shells before the cement set, doing a bit at a time. If clay is well puddled, and the banks slope considerably, the water will be kept in so long as the pool is kept full; but if allowed to get nearly empty in summer, the clay will crack, and thus the water will escape. The cracking would be considerably prevented if covered with a layer of turf, the grass outside. If the bank had a good slope, a coating of tar, a quarter of an inch thick, and well daubed over with fine gravel, or rough sand-drift, would prevent all escape of water; but the smell would be strong, and the water unfit for use for some time. It will set hard. Less thickness would do for keeping the water in; but then the heat of the sun, if powerful on the place in summer, would be apt to draw your tar cake from the bank, and make it loose.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

OCTOBER 13th and 14th. CREWE. Sec., D. Margetts, Crewe. Entries close 30th September.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POUTLTON-LE-FYLDE. Sec., J. Butler.

N.B.—Secretaries will oblige us by sending early copies of their lists.

PARTRIDGE SHOOTING.

(Continued from page 401, Vol. XX.)

HAVE my readers ever been circumstanced as I was, I had stipulated for a late dinner, *very late*, because I should not have enough shooting. When the morning proved wet, I asked them to make it half an hour later, because I should not leave home till some time after I intended. Everything

was granted; and, now, years after, I wonder at the patience displayed towards me.

Woe, woe, woe! My gun was not discharged; my dog was untried; all my new shooting clothes were unsold. I had bargained for getting wet in the feet and legs, and I had anticipated the pleasure of finding all necessary changes provided, and ready aired, by my dear, good wife; and the merry dinner, and the talk of the day's sport over the wine. I had promised my partner just one line, to tell him how I had shot, &c., and all was a blank. It was not made better by the remark of my father-in-law, that he was very sorry for the disappointment, but the rain was much wanted, and would do vast good. Another hour passed, and my wife timidly observed, I might as well change my clothes and dress for dinner. There was nothing to offend in this, but I am afraid I was very cross. Still it rained faster and faster; some of the company could not come. We were ready for dinner an hour before the time; nine sat down to provisions for sixteen. I was glum, and disappointed; my wife was silent; and, instead of a joyous *rénunion*, we had a silent dinner.

I slipped from the table many times in the evening, to see how the weather looked, and was delighted to find it brighter each time. I gradually recovered myself, and at last could cheerfully bear a question from my brother-in-law, whether I would not like a shot or two by moonlight.

Everything, however, that interfered between me and my hobby was a nuisance, and I was glad when it was time to go to bed. If I could but sleep, the morning would come the sooner. I woke before daybreak, and could not close my eyes again, nor would the daylight come soon enough. I see some of my readers laugh. I hear them call me a sorry fellow. I know I tell the truth. Speak you who have panted for years for a day's Partridge shooting; speak you good, patient wives, who have had to bear all I describe, tell the whole truth,—were you not tired of the sound of shooting, and all that it concerned? Did you not suffer broken rest, from the anxiety of your partner? I am afraid we often laugh at things, and shake our heads knowingly, when, if we told the truth, we should admit we were ourselves guilty of the practises we condescended to pity in others.

But at last, hours before our usual time of rising, there was a gleam of light in the east. The rain had ceased, and my first day's shooting had begun. I was at the door with everything that could be suggested or thought of, in the way of dress or equipment, and walked about for an hour waiting for my brother-in-law, who at last appeared, but, to my horror, was not yet ready. "Come my dear fellow," said I, "we shall not start to-day."

"Time enough," was his answer. "I have ordered an early breakfast, and we will start directly afterwards."

"What!" said I, aghast; "You mean to breakfast first?" "Certainly, I always make it a rule. Do not be afraid, the day will be long enough to tire you." I doubted this, but there was no cure for it, but to submit. We breakfasted. I did not think tea the right beverage for such an occasion, and, therefore, asked for some home-brewed beer. I could drink that, but I could not eat, although pressed to do so. My brother-in-law took his meal with a stoicism that surprised me, and I hardly know whether I pitied or envied his indifference. He seemed a long time at it; but everything must have an end, and he finished it. Now I was on the threshold of my enjoyment. The man who was to accompany us was at the door, leading my dog. I was somewhat proud of my *materiel*, and anxious to see what an old hand like my brother-in-law would think necessary for the day. First, I compared his gun with mine. It was a plain and rather heavy one, the polish on the stock was the worse for wear, and the barrels had little trace of browning left; it was, however, scrupulously clean. Mine, on the other hand, was as bright as the day it left the maker's hands. Noting the difference, I handed it to him. "Look at that," said I. "I would not change," was the reply. His powder-flask was an old one, while mine was not only new, but of the most modern and approved construction. My greatest astonishment was, however, reserved for the quantity of shot he carried. One pouch of 3 lbs., and that not quite full. I had, by great seeking, found one that held 4 lbs., and I had also secured a dozen charges, which gave me twenty-four shots in reserve. My brother-in-law borrowed four of these, and gave his pouch to his man to carry. He advised me to do the same,

but I declined. "I liked," I said, "to be independent when I was out, and could carry my own when I was shooting." This caused a smile, but I was more astonished to find he had none of the appliances I thought so necessary. No contrivance for his caps,—they were loose in his waistcoat pocket. Then, he had no turn-screw, no nipple-screw, no picker. In fact, he had only gun, caps, wadding, powder, and shot. I asked him if he did not think my arrangements necessary. His answer was, "Yes, if he were a settler in the backwoods."

We started. "Now," said my brother-in-law, "this rough moor is sure to be full of birds. Your dog is tolerably steady without the gun, do you know whether he can be depended upon?"—"I have no doubt," answered I. The fact is, I relied on the warranty.

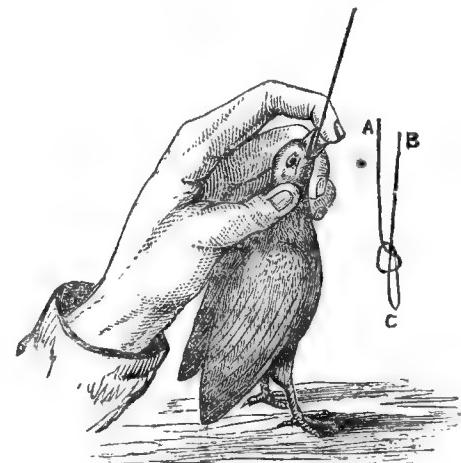
He stood the moment we entered the field. We walked up. Two birds fell to my brother-in-law's gun; I missed both shots. Excusable at first, thought I; and was quietly preparing to reload, when I was disturbed by cries of "Tip," "Tippoo," "Tip," in every note that could express anger. The moment the guns were discharged he rushed all over the field, with stern erect, and, spite of threats or coaxing, never stopped till he had driven every bird away.

GAPES IN CHICKENS.

Insignificant as the subject may appear, and unworthy perhaps, of an illustration, I nevertheless suggest the promulgation of the only mode by which a "poor gaping chicken" may be as effectually cured of his malady as he is likely to die without the use of the means I propose. I do not mean to palm off this mode as a novelty in the "barn-door practice;" but, though farmers may not be ignorant of the means, I find the manner of using them is necessary to be taught, to remove the difficulty in question, as well as special knowledge is necessary in the amputation of a limb.

Farmers neglect to acquaint themselves with this manner of cure, either from suspicions that it is impracticable, or that they are incapable of effecting a cure themselves. If my prescriptions are strictly followed, chickens cannot die with the gapes under the treatment, let them try never so hard. I regard all medicines for the gapes as really fool nostrums.

In making the trial with the horsehair, some difficulty is at first experienced in holding the head of the chicken still while performing the operation, as the windpipe is very sensitive; hence I have sketched the position of the fingers in which the



head may be firmly held without harm to the chicken. While in this position its windpipe may be seen, and the sole cause of its distress. If the rays of the sun are permitted to fall upon its throat, the worms are more distinctly seen.

The horsehair is tied in the manner shown in the drawing, and is most expedient, as other knots cause the loop c to deviate from a straight line a and b, making it difficult to introduce into the windpipe. The loop is about half an inch long, and must be rolled between the thumb and finger to make it angular, as at c. The introduction of the hair must first be by a quick push, and be kept in its place until it can be forced down, lest the coughing of the chicken should expel it. It should be put down about an inch and a half, and twisted

in its course upwards. Each operation should be performed in six or eight seconds of time. It is not absolutely necessary to remove every worm from the windpipe. Coarse hairs are better than fine ones for the purpose.—N. D. E., *American Country Gentleman*.

MIND YOUR POCKETS !

I lately advertised some Pigeons for sale in THE COTTAGE GARDENER, and two or three days afterwards received a letter, of which the following is a copy :—

“ Dear Sir,—Having seen your advertisement in THE COTTAGE GARDENER, that you have several pairs of very good Pigeons for sale, I will thank you to send me word the lowest price for lot you have for sale. Your answer per return will oblige,

“ Yours truly,
“ WILLIAM GARDNER.”

To this I replied that I had several pairs for sale, and gave a list, with prices attached. In a few days I received the following :—

“ Dear Sir,—Your favour of the 8th inst. came duly to hand. In reply, I should have *answer* it before, but I was out shooting, and did not return till yesterday. I have looked over your list you sent, respecting the Pigeons and the price. Now, if you like, I will give you £10 for the lot, which, I think, is a fair price. If these terms suit, you can forward them at once, and, on receipt of the birds, I will remit you a draft for the amount. As we here strangers, I beg to refer you to the *inclose address* as to my standing here. Waiting your reply,

“ I am, &c.,
“ WILLIAM GARDNER.”

The “ *inclose address* ” was a printed scrap of paper, as follows :—

“ Sold by T. B. Prosser, chemist, Tatlock Street, Vauxhall Road, Liverpool.”

Of course, I did not send my Pigeons, but told Mr. Gardner that I should want the money before I parted with them. I also referred him to a gentleman in Liverpool, to whom I wrote at the same time, to ask if he knew anything about Mr. Gardner, or T. B. Prosser; but the reply was that I had acted properly in not parting with the Pigeons, as neither parties were known to him, nor were their names to be found in the directory. I was not at all surprised at this reply, but quite expected it.—GEOEGE BOOTHBY, *Holme Cottage, Louth, Lincolnshire*.

WATERFORD FARMING SOCIETY SHOW.

THIS was held September 22nd. The following prizes were awarded :—

SPANISH.—No entry.

COCHIN.—A Medal, C. N. Bolton, Brook Lodge, Waterford.

DORKING.—A Medal, W. Joyce, Abbey Farm, Waterford.

HAMBURGH.—A Medal, E. Strangman, Kilcop, Waterford.

DUCKS (Aylesbury).—A Medal, C. N. Bolton, Brook Lodge. Highly Commended, Major Quentin, Old Court.

ROUEN (or other variety).—A Medal, C. N. Bolton (black East Indian).

FANCY CHICKENS.—A Medal, W. Joyce (Dorkings).

PIGEONS.

I HAVE again to thank Mr. Paton for his courteous reply to my further questions respecting the House Tumblers. Since his first notice of them, I have made some inquiries respecting the origin of the breed, and I am informed, that in India a breed exists known as Lowtam or Ground Tumblers, which are supposed to be identical with those described by Mr. Paton. The Scotch birds most likely owe their origin to imported stock.

As to the length of the beak, it is evident (as he says they are coarse compared to the Short-faced Tumblers), that he has a different method of measuring, the London fanciers considering five-eighths of an inch a short beak; but then it is measured from the iris of the eye to the end of the quick of the beak. But Mr. Paton has equally astonished me with the accounts of his Air or Flying Tumblers, forty times in a minute at clear intervals of five yards, without sinking. These points far exceed anything I have seen or heard of before, and I hope that gentleman will oblige me again, by saying if these Air Tumblers continue on the wing long; if they fly in a

compact flight; and if they soar high, or ever rise out of sight. I do not clearly understand what he means, when he says, they go on tumbling at regular intervals until they drop. Does he imply until they settle, or till they drop from exhaustion?

NOTE ON TURBIT PIGEONS.—The London head and beak fanciers seem to wish to breed this Pigeon to the Tumbler standard. This I object to, as the head of the really good Turbit is very peculiar,—the occipital ridge is much raised, and the gullet, or dewlap, is a striking feature. The best model I can direct the Turbit fanciers to is the head of a frog. M. M. Boitard and Corbie, the French writers, say,—“ *Et leur tête crapautee.* ”

I fancy the Pigeons referred to by your correspondent, “ SAMUEL GILSON, jun., ” in THE COTTAGE GARDENER, of May 25th, as known in Italy by the name of “ *Columba Scintillata*, ” is, most probably, a spangled-shouldered sub-variety of the feather-footed Shield, described in THE COTTAGE GARDENER, April 13th, 1858. It is not uncommon for the Shields to have white wing-bars, but I have not seen any with the shoulders wholly spangled, which, doubtlessly, adds to their beauty.

I should feel obliged for any descriptions of those varieties which I have omitted through want of knowledge.

NOTE ON PIGEON PARASITES.—The fly I there mentioned as producing a tick on Pigeons, not knowing its proper name, is, I am informed, the *Ornithomya*, a very peculiar form of parasite on many birds, more especially on Swallows. It is allied to *Hippobosce*, or New Forest fly, which so torments horses.—B. P. BRENT.

OUR LETTER BOX.

PIGEONS (Wm. D. Paine).—Pigeons thrive best when kept clean, and they should have their nests and house cleaned out as often as practicable, without disturbing the sitting birds. Much will depend on the docility of the occupants. Blue Rocks are very wild, and do not approve of being much interfered with. But are the birds in question really Blue Rocks? because the Chequered Dove-house Pigeons often pass for such. I do not recognise the Runts by the name of “ White Egyptians.” Are they large? If so, I do not think it advisable to reduce the size of the nests. Twelve pairs of nests are, however, scarcely sufficient for twelve pairs of Pigeons. I should rather advise Mr. Paine to leave the nests as they are for the Runts, and in the space, two feet high, between the top of these nests and the alighting shelf, to erect a double row of nests, eleven inches and a half square, with alighting boards six inches in front, and partitions dividing these into pairs; thus, he will get eighteen pairs of nests for the *Rock*s. The Pigeons are, at present, much too numerous for the number of the nests, as each pair must be provided with at least one pair of nests; and it is far better to reduce the number of birds below the amount of nest places, than to allow any excess. As insufficient breeding room causes the birds to quarrel, when the produce will be small, all supernumerary cocks should be removed, as they are great disturbers of the general weal.—B. P. B.

PARTRIDGE GAME FOWL.—About a twelvemonth since, your correspondent, “ NEWMARKET,” inquired for some pure-bred Partridge Game. I have one hen bred from such stock, yellow-legged, and if he likes to accept her, he may have her, if he thinks her worth the carriage.—B. P. BRENT, *Dallington, Sussex*.

CINNAMON COCK CANARIES.—I was not aware that Cinnamon cock Canaries were as rare as tortoiseshell Tom cats. I once had a handsome turned-crowned cock, that sang beautifully: his head and wings were cinnamon coloured, and the body lemon. The dealer I bought him of, at St. Omer, told me he once had one all cinnamon, turned-crowned, and frilled down the neck like a Jacobin Pigeon.—B. P. BRENT.

GUINEA FOWLS DYING.—I would suggest to your *Old Subscriber*, that the debility and death of his young Guinea Fowls may proceed from the attacks of parasites. If such is the case (which he may determine on examination), I would advise him to mix some white precipitate powder in hog’s-lard, and anoint any bare places he may find under the wings, behind the thighs, or on the abdomen, and it will destroy the insects, when I have little doubt the chickens will recover.

—B. P. B.

MOTTLED-BREASTED RED GAME (A. B.).—The term Mottled-breasted Red is almost too indefinite to enable us to give an opinion as to the proper marking of the hens. There can, however, be no doubt they are eligible for prizes in the class for “ Black-breasted and other Reds.” We should think a dark hen with light golden hackle the proper match.

LONDON MARKETS.—OCTOBER 4TH.

POULTRY.

There has been but a scanty supply of poultry during the week, and prices have somewhat improved in consequence.

	Each.		Each.
Large Fowls ...	4s. 6d. to 5s. 0d.	Hares	2s. 6d. to 3s. 0d.
Small ditto.....	3 0 " 3 6	Partridges	0 4 " 0 9
Chickens.....	2 0 " 2 6	Grouse.....	3 0 " 3 6
Geese	6 0 " 8 0	Rabbits	1 3 " 1 4
Ducks	2 3 " 2 9	Wild ditto.....	0 8 " 0 9
		Pigeons.....	8d. to 9d.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	OCTOBER 12-18, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
12	TU	Drimia altissima.	30.177-30.095	69-45	S.W.	—	20 af 6	13 af 5	18 af 7	5	13 26	285
13	W	Disporum fulvum.	30.189-30.176	66-36	S.W.	—	22 6	11 5	16 8	6	13 41	286
14	TH	Dumasia pubesens.	30.119-30.027	64-40	E.	—	24 6	9 5	22 9	7	13 54	287
15	F	Dichia altissima.	30.016-30.020	58-50	N.E.	—	25 6	6 5	35 19	8	14 8	288
16	S	Echeveria coccinea.	30.012-29.947	63-40	E.	—	27 6	4 5	50 11	9	14 21	289
17	SUN	20 SUNDAY AFTER TRINITY.	29.897-29.780	64-44	S.	.04	29 6	2 5	morn.	10	14 33	290
18	M	St. LUKE.	30.048-29.445	56-50	E.	.21	31 6	0 5	7 1	11	14 45	291

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 58.7° and 41.2°, respectively. The greatest heat, 76°, occurred on the 14th, in 1845; and the lowest cold, 24°, on the 15th, in 1850. During the period 115 days were fine, and on 102 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

THE advantage of deep trenching was never more perceptible than during the past season. The *Asparagus*, *Sea-kale*, and *Rhubarb*, intended for forcing, may be taken up, if the ground is intended for trenching, and put in by the heels in any spare corner, taking care to protect the *Asparagus* crowns with litter. As the weather is still most favourable, and as there are few, if any, gardens but would be benefited by the operation, we would strongly advise a regular system to be adopted, until the whole of the garden is thoroughly trenched in succession. Whoever has spare ground, when deeply dug, or trenched, should still continue to put out *Coleworts* and *Cabbage Plants*; or if any strong plants of *Savoy*, or the varieties of *Kale*, should be left in the seed-beds, get them out as soon as possible.

CARROONS.—Gather up the leaves carefully, and twist a hayband around them when dry; the earth to be broken fine, and banked up all round, to their full height, and beaten smooth, to throw off the rain.

CAULIFLOWERS, LETTUCE, &c.—Finish planting, or securing, in their winter quarters.

CELERY.—Take advantage of the present fine weather to earth-up, being careful to keep the leaves together.

MUSHROOMS.—The dung, if collected and prepared as advised in September, will now be fit for making into beds. The general width is from four to five feet at bottom, by three or four feet high, sloping from both sides and ends, in the form of the ridge of a barn. When the foundation is laid with the most littery portion of the dung, the rest should be built up, trod firmly during the operation, and frequently beaten solid with a three or four-tined fork, as success, in a great measure, depends upon its solidity. Watch-sticks to be stuck into it, and examined daily, until the heat has decreased to a moderate and mild degree, when the spawn may be inserted.

POTATOES.—Continue to take up the main crops.

FRUIT GARDEN.

The root-pruning of luxuriant fruit trees is recommended, as an excellent system to establish an equilibrium between root and branch. A trench to be dug around the tree,—the distance must be proportioned to the size of the tree, and left to the judgment of the operator, as the object is to cut off the very large roots that supply the gross and over-luxuriant branches with a superabundance of sap, without destroying or injuring the fibrous and best roots. It would be an advantage when planting, and where the soil is poor, to mix with it some fresh maiden loam, to promote a healthy and fruit-bearing growth. Some progress should now be made in the formation of fruit-tree borders, where planting is intended. When the bottom is cold and clayey, a stratum, or layer, of stones, or bricks, should be firmly imbedded there, to prevent the descent of the roots, with drains in the front, to prevent a stagnation of water.

WALNUTS.—When gathered and sweated, to be packed in dry, unglazed earthen pans, covered with a piece of

dry canvass, or thick brown paper, and about an inch of dry sand over that; to be kept in a moderately dry place, and removed to a damper situation for a week or ten days, to freshen them; and to be shaken in a sack, to brighten them before they are used.

FLOWER GARDEN.

CARNATIONS and PICOTEES.—The late layers to be taken off the stools, and planted out, or potted, immediately. If postponed beyond the end of the month it is very probable that they will not be sufficiently established in their pots, or in the open ground, to withstand the vicissitudes of the winter.

COMPOSTS.—All composts for potting purposes to be secured under cover, before the drenching rains, that may be shortly expected, will render them unfit for general use.

PITS and FRAMES.—Old sashes, that have been stripped of their glasses, may be brought into use, by thatching them with a straw facing, to cover pits and frames, instead of mats. All pit and frame-glass to be washed clean, before the dull, dark weather of November sets in, for the admission of light,—one of the agents most beneficial for healthy vegetation.

TULIPS.—Lose no time in planting the offsets, and any of the main roots which do not appear in a healthy state.

WILLIAM KEANE.

HAMPTON COURT GARDENS.

ARRANGEMENT OF COLOURS IN BEDDING.

THIS season has been most trying to many good gardeners, as much as to those at Hampton Court. I was there in July, when the flower-beds were much distressed for want of rain, and I put off my visit for the yearly report of the place, and progress of flower gardening, till the last moment on that account.

Some kinds of Geraniums stood out well against the drought, and *Tom Thumb* the best. *Magnum Bonum* is not, therefore, as we thought, the best Scarlet Geranium for Hampton Court; but whether *Punch* is better or worse than *Tom*, for this garden, has not been proved, as at Kew, where the two had an equal chance, and where *Punch* beat *Tom* as surpassingly as ever he beat poor *Judy*.

The *floribunda* variety of *Calceolaria integrifolia*,—the kind which is most used at the Crystal Palace,—has done very well here, and better than all the others which they tried. *Brillante* variegated Geranium was as white in the leaves as *Flower of the Day*, and as rich in scarlet bloom as *Tom Thumb*. It was here that the fact of *Brillante* being a sport from *Tom Thumb* was first proved.

There is an excellent plan here of naming every kind of plant which is bedded, by which all who can read may learn the names; also, whether the bed be made of a species, or a variety, or a sport, according to the common meaning of those terms. There are two large beds of *Lantana crocea*, the best telling beds in the garden, after the scarlet Geraniums and yellow Calceolaria. The

driest season, and the poorest soil, suit this Lantana best. These beds of *Lantana crocea* were as symmetrical, and as much covered with bloom, as any bed of a Verbena that was ever seen.

General Simpson is the best scarlet Verbena they have ; at least it stood the sun better than *Defiance* and *Lord Raylan*, where three or four dozens of kinds of Verbena went wrong altogether.

Calceolaria integrifolia floribunda has done remarkably well, and better than any other kind of that race. It is the principal kind of Calceolaria at the Crystal Palace, and, therefore, a sure kind in all weathers. There is not an edging to any of the flower-beds here, as at Kew, and the Crystal Palace ; but a greater attention is paid here to the harmony of colours, than to contrasts. Symmetry is also one of the points on which much stress is laid.

In these public gardens, where the great bulk of the visitors know little or nothing about the laws of colours, the best plan would seem to be that which is most likely to attract the attention of the crowd. Get the multitude first into a frame of eye, so to speak, to see flowers, by presenting them in brilliant masses of the strongest colours,—a blaze, in fact. Then will be the time to present them scientifically ; but not by the scale of the rainbow-like planters, or that of the decorative painters, like Chevreul, whose scales and principles are altogether inapplicable to flower gardening, as THE COTTAGE GARDENER has had to maintain, hitherto single-handed ; while powerful writers, in contemporary works, pinned their faith in the art to the bow in the clouds, and to the labours of the cloudless painters. But, through the agency of the great comet,—I do not say whether on this earth, or millions of miles from it,—the clouds have cleared up, the atmosphere is free, and the Doctor has recanted.

Dr. Lindley and his satellites stood up for the all-sufficiency of M. E. Chevreul, “director of the dye works of the Gobelins,” in all matters relating to the disposition of flowers and flowering plants, till they had no leg to stand on. The ladies as firmly stood to their text in our pages ; the Crystal Palace took up their cue ; and Kew followed. Chiswick alone stood in the background, and it was seen even here, at last, that flower gardening must be something different from dying, or decorating in water colours. The chromatic scales spoiled Dr. Lindley’s Crocuses, and Chevreul, like Gordon, was thrown overboard with as little ceremony as if he had never been his right-hand man on colours. But what will his disciples say to all this rashness ? Will they, too, eat the leek, and kick the Frenchman ? That I know not ; but I shall have less reason, in future, to be so particular in telling what the ladies say and require in the flower garden, and I shall have more confidence in the Doctor, who only wants his confession to be purged from a little heresy, to render him a good authority in the flower-garden. He says, in effect, provided you adopt symmetry for the foundation, all flowers or colours will do well enough side by side. This is what I called “heights and colours,” providing you have no steps in a bed or border, by planting low plants next to high ones. The colours do not signify so much as people might think, according to the Doctor’s confession ; but the one is just as essential as the other. All the symmetry on earth will not help some colours from destroying the effect of other colours,—drowning them, as I say, when they are placed together ; and not only that, but, by-and-by, he will learn that a certain breadth of some colours is necessary, before some two colours can be made to agree with a good eyesight. He will also learn that what they have said about rays of light, and of colours, and also about complementary colours, has very little reference to the disposition of flowers out of a nosegay, and that little reference is more for the imagination, than for the image in the eye.

From what Dr. Lindley published and praised years ago, from Chevreul, I made up my mind I should never read a word of that book. Mr. Donald, the curator at

Hampton Court Gardens, offered me the loan of that book soon after he came to this neighbourhood. I told him I would sooner read the Koran. But, after the Doctor’s conversion, I asked the favour of a reading, and I have the book now for the first time. I find it to be exactly what a great lady told me of it, four years back,—“It is a charming book on dress and decoration, but nothing on the flower garden.” It is more than that : it contains a dangerous heresy, to get into the hands or heads of young gardeners.

Two or three of the boys who made the nosegays under me at Shrubland Park had a much better eye for flowers than Chevreul ; but I see he tries his hand at them also. Chevreul, and all his followers on flowers, Doctor Lindley among the rest, mistook the first natural principle of pictures, good or bad, out of flowers. No one can alter that principle, and without the alteration, all the rules of colours, and scales of colours, go for nothing in flower gardening. The principle is, that *every colour we use is placed in the centre of two other colours*, whether we can see them or not ; and, being so placed by God, who made them, and who made our eye to see them to the best advantage, on the natural system,—His system,—all other systems, or all the artificial systems, are necessarily wrong ; and the more artificial the system is, the farther it is from the natural system, and the more wrong it is. The natural system is, that the deepest and most intense colours, as well as the weakest colours, of all our bedding plants, is in the centre of a green of equal or unequal intensity,—the inequality not depending on the strength of the colour ; and both the green and the colour *on it*, are covered over equally with a third natural colour, a light grey, which is the best term for the light of our sun, over and around a bed of flowers. When you put two rows of plants, as in a ribbon,—say, a scarlet row, and a yellow row,—and read the colours across, you will find then this green, scarlet, green, yellow, green ; grey, or any other name for sunlight, covers the green, and the red, and yellow, equally. But the eye cannot measure the colour of light, and that is why a white flower agrees with every other flower, and why a band of white will restore the accord, or agreement, of two opposing colours. A white flower is so many more degrees of light, as it were, as compared with sunlight.

Complementary colours, as they call them, can, therefore, never be obtained from flowers growing on plants, because all flowers are then on one complementary colour, green, of various intensity. Even if you cut off the flowers, and cover the ground with the petals of *Tom Thumb*, you cannot get one clear colour ; and, without two clear colours, what is the use or value of a complementary colour ? The reason why the bed of petals of *Tom Thumb* is not a clear colour is, that so many dark spaces intervene all over the bed, that the light on those furrows amounts to a grey. Now, cover the bed with a piece of scarlet cloth, and the next bed with a piece of yellow cloth, and let there be no kind of colour between the two,—as a strip of grass, or gravel,—and the two will give their own complementary colours, but not otherwise. Therefore, to cover a flower garden after Chevreul, or after any of the scales for colours, you must needs cover every inch of the ground, every colour with its own piece of cloth, all to meet at the edges, and sunlight is the only ground colour, or supposed colour. If the Chevreulites allow us a peep of the grass, their scale is “done for.”

Applying this natural principle to a place like Hampton Court, where every bed is at the same distance from the walk, and from one another, and is of the same size as the rest, one might think that every bed could stand on its own merits, without reference to the bed before or behind it. But it is far otherwise. If there were no grass or leaves, it is probable that each bed might be independent of the rest, not otherwise.

The natural rule to represent colours on the natural system in one continuous line, as in promenade beds, is extremely simple after you once see it in practice. Mr. Donald has fixed on planting all these beds, in future, on that natural system. He showed me his plan, and I agreed with him altogether, except in the value of some kinds of plants for neutrals. But that we have all of us yet to learn from experience.

The greatest improvement, and the best thing which Mr. Donald has yet done here, is the way he restored the old Yews in the garden-front of the Palace entrance, to perfect health and free growth, from a premature bundling to the wood-yard, by cleaning and clearing out from under them, and by making beds over the roots, to encourage young ones to the surface. D. BEATON.

PECULIARITIES OF THE RASPBERRY.

BETWEEN very high and very low culture, what a vast difference in almost everything! And this difference is owing to two matters,—well-conceived plans, based on the aptitude of the plant, and on a due application of labour. But who is he that can take hold of all the subjects of even an ordinary garden, and say, "I will cultivate everything alike in the very highest order of which it is capable?" So that we find that one man makes one thing his pet, and another man something else; and thus, as Cowper remarked, "Bit by bit the pig is eaten."

In no fruit is the difference more great than in the culture of the Raspberry. The difference between a good crop of Raspberries and a bad one is enormous. In the one case, a few lean, half-starved stems, surmounted by a tuft of half-sized, half-flavoured fruit, the stems beneath giving no return; in the other, an uniform amount of finely-developed foliage, and bouncing, luscious fruit, from the bottom of the stem to the top. Words can scarcely describe the difference. And how is all this to be accounted for? By ignorance of the plant's habits and aptitudes in the first place, and the want of high cultural principles in the second. There are two things as to their habits, to which I would particularly draw attention,—their love of a permanency of moisture, and their extreme aptitude for rooting near the surface. On these two then, as pivots, their general culture should be founded.

As to soil, any unctuous kind will be found suitable, that is to say, one of somewhat strong loamy character. I have generally known them succeed best in a darkish-coloured soil, which was what might be called rather greasy after rain. In speaking of the tendency to produce surface roots, I did not mean to the exclusion of strong roots beneath, for such are ever found in the Raspberry. But, in proportion as surface culture is promoted, so in like proportion will the plant betake itself less to those wiry and deeper roots. About three or four years since, I formed an idea that they would be better cultivated in a trench, like Celery. I had found that piling surface-dressings above the ground level, on our sandy soils, did not fully accomplish what I had intended,—the very manure, however moist it might be applied, becoming dried in hot weather. This trench system I have carried out, and find it excellent. The mode of preparing the ground is this:—a trench is excavated nearly a yard in width, and about half a yard in depth; on this excavation is spread half-rotten manure, and on this the Raspberries are set, and a slight coating of rotten manure spread over their fibres; soil is then added, but only a little; and, after the planting is over, the whole is at least six inches below the ground level. Here, then, is a hollow, or receptacle, for future top-dressings, without ever rising above the surface of the soil; for I find by experience, that about two, or more, inches of manure, spread over their roots annually, or biennially, subsides into a bare inch in the course of the year. We may here see, that Raspberries planted thus are always in a position to receive and retain the rains of summer; and, although such a course may be impolitic on wet soils, yet I may, I think, aver, that two-thirds of the Raspberries in the country would be benefited by such a procedure. It will be seen, that my purpose here is not to say all that might be said of this useful fruit, but, agreeably to the heading of my remarks, to show forth a few features which I deem peculiar.

Let me, then, direct attention to their aptitude for surface roots, providing inducements are held out to

them. It is surely too late in the day, to use much argument to persuade good people, who possess gardens, that surface fibres, as they are called,—albeit a misnomer,—are of immense importance to all fruit-bearing trees. Now, if any mere tyro was to look into such a question for the first time, he would at once suppose that surface fibres signified roots rising above the ground level; and indeed, in the case of the Black Currant and Raspberry, they doubtless would, could we keep up a perpetual fog, or watery mist, during May and June. But the alternations of drought check these aspirants for the treasures of the atmosphere, and, like bees venturing too far from home under untoward circumstances, hundreds perish by the way. Nevertheless, this must not frighten us from the principle itself,—it is only suggestive of caution. What I want to prove is, that these fibres, or bundles of fibres, just under a nourishing medium, are of more importance than the meagre and "beggarly account" of fibres, by which deep and stringy roots are terminated,—and that they differ in their mode of working, as also the conditions they are placed under.

But let me now pass on to the natural habits of the Raspberry, as evinced in its above-ground growth. The first thing that strikes us, is its prodigiously prolific character with regard to its progeny. We have in some cases a score or more suckers, where only five are ultimately required. But these suckers must be understood to be robbers in a certain sense; yet, since the Raspberry is renewed, and brought into a kind of new existence by means of these suckers, we must see what can be done with them. Our readers may rely upon it, that every sucker detracts, not so much from the parent stool immediately, but from the virtues of the soil, or compost, around the original stem. Therefore, let everyone who can spare time pull away every sucker not wanted, the moment they can fairly handle them, and they may rest assured that they are removing what would ultimately detract from the fruitful bush.

Let me now pass on to another feature of importance in Raspberry culture,—the mode of pruning. Although I would not give an over-prominence to mere pruning matters, there is a feature in this which, I think, well deserves particular notice. We all know, that, by the old practice, it was common to reserve from four to half-a-dozen canes, and to prune them about the same length. The effect of this has ever been to produce a series of sprouts all in one part, while the other portions below were entirely of a negative character. In practice, I know this to be a great error; but why, in the name of common sense, must this be so? Shoots should be left about five feet high, say the old writers; but they say nothing about the graduation in height. But, if we possess four good and proper canes, and one is left five feet, a second four feet, a third three feet, and a fourth thirty inches, is it not obvious that this mass of canes must be clothed progressively, and that a greater equalisation of young spray must be the consequence? It is so. But I do not insist on the precise heights here given,—that must ever depend, in some degree, on the character of the canes. Let, then, those who choose to push the cultivation of the Raspberry consider this matter, and just use what is generally termed common sense. Such is not unfrequently of more immediate use than even science itself, strange as it may appear. R. ERRINGTON.

LOOKING ABOUT US.

THE NURSERY OF THE MESSES. VEITCH, AT EXETER.

WHAT a grand thing it is, *not* to grumble, but to have full power and privilege to do so. Shut up this great safety-valve, and what dire results would again take place among us, as respects individuals, families, and communities! John Bull is one of the freest and happiest of men, just because he may grumble to his heart's content.

One of the marks of the go-aheadism of the age—the growing desire for movement and seeing fresh scenes—furnishes a fine field for the development of this national characteristic. It matters but little whether a man actually travels or not, provided that a subject gives him an opportunity to grumble. Pop in upon that worthy gardener who believes in his heart that there is no place comparable with his own,—and, ere long, you are regaled with the chant, “I cant get out, I never can get out,” just because he won’t go out, feeling, as he does, that, if he only did so, all the relish and sweetness of his chief cause of grumbling would be irrecoverably gone. How many, on the other hand, go a-touring every year, just that they may have the pleasure of grumbling. Take up any number of the Leviathan press, especially after the autumn prorogation of Parliament, and reckon yourself fortunate if you do not meet with a whole host of complaints, more especially as respects the Continent, regarding passports, *visés*, bad accommodation, exorbitant charges, gendarmes, surveillance, turning the effects of portmanteaus topsy-turvy, detention of luggage, and detention at times of their own valuable persons. I should be sorry to deprive all such of the pleasure of snorting their wrongs. “But” the *Times* might just ask them, “ Didn’t you know all this before you crossed the water? Would it not be as well now that you tried some of the sights in the British Isles? ” I do not believe that one in twenty of those who talk so homely about Bulong (Boulogne), who seem at times in such ecstacies about the beauties of *Peri* (Paris),—pronouncing the word correct enough, no doubt, but so different to our jog-trot vernacular, that really it is some time before we can make out whether their lucubrations have reference to a spirit of the Persians, or to the *bona fide* capital of our Gallic neighbours;—I do not believe that one in twenty of these admirers and grumbler, in turn, have ever given themselves the opportunity of visiting the Trosachs, of revelling amid the beauties of Scottish Lowland scenery, or of being struck with awe with the romantic grandeur of its highland wilds,—have ever visited the lake districts, so associated with the heights and depths of poesy,—ever climbed the beautiful Welsh mountains,—ever sought out the picturesque grandeur of the home and midland counties,—ever gazed on the picturesque, romantic, undulating scenery of Devonshire,—or visited the Cove of Cork and the Lakes of Killarney,—or had a kiss of the blarney stone,—though in one and all they would meet and receive a hearty welcome.

For purposes in which gardening scarcely entered into consideration, I and a friend lately spent a few days in South Devon, and so pleased were we with the scenery we witnessed, and the kind treatment we everywhere experienced among total strangers, that I consider it a duty to warn all, to whom grumbling is a source of happiness, *not* to go there; for, if their grumbling can exist amid such places as Torquay, and the romantic scenery in its neighbourhood,—if not dreamed away on the downiest of beds, if not exorcised by Devonshire ham, eggs, and pullets, it will be sure to be effectually drowned in a vessel of Devonshire cream. So grumbler, if you do venture, go well armed, and resolve not to be pleased.

The beauties of the landscape, however striking, could not quite keep us from indulging the ruling passion, by visiting, when at Exeter, the celebrated nursery of the Messrs. Veitch, so well known for the introduction of novelties, and the superior cultivation practised in all departments. To gain access to the nursery, you must pass through the town to a distance of something like two miles from the Exeter station. The main entrance walk, or promenade, is distinguished by having fine specimens of the best hardy trees and shrubs,—generally in pairs, opposite each other, along its sides,—thus at once presenting to the purchaser a great amount of information as to the character and outline of the plants he might be induced to purchase. About midway the length of this promenade walk, two walks branch off at right angles,

one leading to the conservatory, plant-houses, &c., and the other to a curvilinear-like house, used chiefly for sheltering the tender beauties of the Pine tribe. This cross walk is graced with fine specimens of Araucarias, Deodars, &c. Near the point of juncture, a rough piece of rockwork is thrown up by means of large blocks of stone, &c.; and this is chiefly devoted to plants with singular or fine foliage,—as Wellingtonias, Yuccas, Pampas Grass, hardy Ferns, &c., which will become more interesting every year. On the right-hand side, a miniature lake is enclosed, supplied with Water Lilies, &c., and its sides also planted with Alpines and Ferns. Amongst these, a row of scarlet Geraniums had also been placed,—no doubt for the purpose of pleasing visitors, even in such a place, with a lighting up with gaudy colours, but which appeared to us, to be the only departure from that appropriateness and refined taste everywhere else observable in this nursery. I have of late noticed, that in such places, designed to represent a piece of wild natural scenery, there is, frequently, too much apparent of high keeping, uniform width of walks, &c. A friend of ours has thrown up a large rockery of this description, chiefly for Ferns, Alpines, and fine-leaved plants of all kinds; and one of its charms arises from allowing *Arabis*, *Sedums*, and the smaller Phloxes, &c., to encroach more or less upon the walks, depriving them thoroughly of the idea of trimness and regularity.

At the end of this promenade, two other walks branch off at right angles, one to the left, leading to the offices, yards, pits, &c.; and the other going round large banks of Roses,—as fully in bloom, in the last days of August, as they could have been in the first days of July. A gate in the fence enables you to enter the private demesne of Mr. Veitch, sen., and to notice the pretty lawn, ornamented with flower-beds round its side, filled on the grouping system, some with one colour in each, and others with contrasted colours, mixed, &c. The most observable features, however, were fine specimens of Araucarias, Wellingtonias, Deodars, beautiful variegated Hollies, and an avenue formed chiefly, as far as I recollect, of Irish Yews, as a private entrance from another road.

Although, on the whole, the establishment contains a good amount of glass, yet there was much less than I had expected to find, considering what quantities of plants had issued from it for so many years,—showing that energy and concentration of purpose had more to do with its fame, than mere house room, or extent of ground. In getting among the pits, I was pleased to find one long one devoted to Alpines and hardy Ferns, in pots, which must be very interesting, especially in the spring months, when so many of the former are in bloom. In order that visitors might be able to form some idea of what the little Ferns in the pots would come to, a span-roofed house had been made, merely covered with thin canvass, the sides consisting of a hedge of *Cupressus sempervirens*, as far as I recollect. A large vase was placed in the centre, with a jet for water, and the Ferns were arranged around, in vases and large pots: many of them, especially the smaller kinds, were very fine specimens, and all screened from the sun by the canvass shade, and perfectly at home. It had not been determined on, whether, on removing the canvass in the autumn, when the sun’s rays were less powerful, the Ferns should be left there, exposed all the winter; but, if so, I presume some means would be resorted to for protecting the pots and vases at least.

I may here notice, that a large square seemed devoted to the most showy herbaceous plants, such as a great variety of Phloxes, large specimens of *Statice latifolia*, and others, finely in bloom; beds of *Delphinium formosum*, and lines of *Delphinium cardinale*, which looked very nice with its scarlet flowers; and, I have no doubt, would tell well if the plants were planted thick enough. In the ground appropriated for annuals, the beauty had in most cases gone, but there was a nice mass of blueish-lilac *Nycterina selaginoides*, showing it would tell well

as a dwarf bed. Mr. Veitch spoke highly of a new yellow (*Enothera*, something between the little *prostrata* and *Frazerii*); but we saw it at a disadvantage. There was, however, a little gem of a *Coreopsis*, or rather a *Calliopsis*, a novelty, in the way of *tinctoria*, combining the best properties of *atropurpurea*, *atrosanguinea*, and *marmorata*, which, I am sure, will give great satisfaction. The bed was very regular throughout, about eighteen inches in height, flowers large, and produced freely; but relieved by myriads of unopened buds, and the foliage, like the stems, very slender, reminding one of a bed of Mare's-tail Grass, almost wholly smothered with bloom. Stocks had the remains of departed grandeur, but the China Aster were in full beauty, and were by far the finest I had ever seen.

I feel I am not sufficiently up to the new classification of Aster, but these were chiefly of the broad expanded petal and the incurved petal kinds, with very few of what are called the pyramidal varieties. The flowers were not only fine,—many of them from four to five inches or more in diameter,—but the plants were sturdy, compact bushes. Mr. Veitch courteously gave us his outline of management, and, although he could have no idea that we would note and print the information, I hope I do not greatly break confidence in placing his system before the notice of our readers for their consideration and imitation. The seeds were home-saved,—there was every appearance that the present plants would ripen their seed kindly,—and were sown in a slight hotbed in the usual manner. As soon as fairly handleable, the plants were placed, separately, in small pots, kept under protection, and encouraged to grow until May. Meanwhile, a piece of ground had been heavily dunged, trenched and ridged in winter; had received several forkings over in spring, to mellow and sweeten it; and, when all was ready, the plants were taken and turned out, each variety by itself, and each plant two feet apart each way from its neighbour.

Whilst speaking of herbaceous plants, I must not forget to mention how they manage, very successfully, the very beautiful *Tropaeolum speciosum*, which is so rarely met with in a robust, healthy state. Here it is treated as a hardy, tuberous, climbing plant, and we found it blooming vigorously in many places; but always where it could enjoy moisture and coolness at the roots, and shade from bright sunshine. A large collection of *Liliums* were in excellent order; and *Geraniums*, &c., cut down and breaking, were in fine condition.

R. FISH.

(To be continued.)

STORING FRUIT IN WINTER.

NOTWITHSTANDING the many admonitions for gathering in our winter fruits with care,—which every gardening publication has urged, from Miller and Abercrombie, downwards,—it still is a fact, that Apples and Pears, as well as Onions and other things, are rattled together like so many marbles or road-stones,—labourers and others entrusted with the job seeming heedless about the consequences; and, as in their eyes French Crabs and other late Apples and Pears present no external bruises of any consequence at the time of putting away, it is concluded that they have not suffered any harm. This fallacious notion is more widely spread than is generally admitted, and, either from carelessness or some other cause, fruits for winter use are often jumbled together more than they ought to be, to the detriment of the fruit, and its premature decay. Many other things, as well as fruit, suffer from the same cause. Onions do not like to be treated like corn or seeds,—when tumbled about in all directions, and bruised all over, the most vulnerable parts lead to decay, and the bulb does not keep anything like so long as it ought. So well is this known, that some extensive greengrocers in country towns have garden plots of their own, where they grow things on purpose to keep late in the season, being unwilling to trust to the uncertainties of those jostled about in the market.

Now, if such hardy bulbs as Onions suffer in the way al-

luded to, how much more will Apples and Pears, whose internal substance is not defended by so many folds of outer covering as in the Onion; and, the tissue being composed of juices more likely to ferment by being damaged, destruction is the inevitable consequence. Some kinds, however, resist decay longer than others; but, when it does commence, it will invariably do so at a place injured by some previous mishap. Others more speedily decay, containing within themselves the elements of their own destruction, which, it is needless to say, is hastened on by any rude treatment they may have received at the time of storing away.

As it is one of the fixed laws of nature that heat hastens everything on to that point of maturity called ripeness, while cold retards that process, fruit stored for winter use ought to be kept in as cool a place as possible, as by that means its ripening will be retarded. A fruit-room, therefore, ought to be as cool as possible,—one partly underground, and on the north side of a wall, will be best; but, wherever it is, let it be well ventilated, as nothing tends more to hasten decay than a confined atmosphere, impregnated, as it generally is, with the odour from the fruits collected there. Fungi of various kinds are generated, and putrefaction goes on rapidly. On the contrary, a dry, cool air promotes the preservation of fruits, and other perishable articles.

Now, as fruits keep better in a cool, than in a warm atmosphere, it is advisable not to house them until most of the warm weather is over for the season. September is often a warm month, and, when so, let the best-keeping kinds of Apples hang as long on the trees as possible, before gathering. The same may be said of Pears. Even those that will no longer hang will often keep better in some cool cellar during the warm weeks of autumn, than in an airy fruit-room at that time; for it is a remarkable fact, that, when cold, frosty weather does set in, the fruit that may have been decaying for some time previously almost ceases to do so then,—the cold, dry air arrests it; for, it is observed, that cold air ought at all times to be freely admitted into the fruit-room, as any amount of cold, short of not being entirely frozen, will be found beneficial. Fires in a fruit-room being only wanted occasionally to drive off damp, or that sluggish, impure air which refuses to depart by the air-openings, in periods of damp weather, or during intense frosts, or, it may be, where some kinds are wanted, to hasten ripening, it is advisable to apply a fire. At all other times it is better without.

Of the construction of a fruit-room much discussion has often taken place; but, in a general way, every building so used is too low, and crowded with shelves too close together; for the fruits at the far side of the shelf are too far removed from the currents of air to derive any benefit from it, while the odour or gases emitted by one fruit must of necessity pass through, and linger amongst the others, to their injury; while, very often, the top of the room is sealed against its escape. This is no idle notion, as I have often seen fruits kept in fine-looking fruit-rooms run to decay sooner than similar kinds heaped together in the bottom of the hop kilns in this neighbourhood, with an atmosphere above them unimpeded by any ceiling for twenty feet or more. Fruits, like human beings, like lofty dwellings, and their conservation is, accordingly, increased or decreased, as this rule is kept or violated.

In some seasons, or in some situations, the preservation of fruits is not so satisfactory as in others; and, what is somewhat unfortunate, the best-grown fruits keep worst. Last year (1857) Apples and Pears kept very badly. The fine summer and autumn had ripened them so thoroughly, and filled them with so much saccharine matter, that they began to decay some months earlier than their wonted period. This season they are not so forward; nevertheless, they may keep badly, if gathered and housed in close, confined quarters too early in the season. It is better, therefore, to wait, and let them hang as long as they will; and, if they fall very much, and are obliged to be gathered, let them be placed on a cellar floor for a time, in shallow baskets, and after a while brought out and put into their place, being careful not to remove any of that oily varnish with which they are encased, which acts as a sort of preservative from the intrusion of damp, and keeps the fruits from decaying.

In drawing these notes to a close, I most strongly urge on the small grower, who has but a few pet Apples and Pears, and but indifferent accommodation for their keeping, to place the Apples in his cellar or larder. The Pears, however, may be kept a little warmer, for, without this, late Pears never arrive at anything like an agreeable flavour; and a long and

cold confinement, though it will keep even such fruits as Strawberries, is at the expense of their flavour, and need only be adopted on particular occasions. But ordinary kitchen Apples, and even late table ones, may have their period of useful service prolonged, by being, in the first place, kept in a cool situation, and afterwards, if wanted, put into a warmer one, to get mellow. The means whereby this may be effected I leave to the contrivance of those interested, and have only to say, that the most homely will often succeed as well, or better, than those having more extensive accommodation. But, wherever they are kept, let the place be sweet and clean, and avoid crowding too much; for fruit, like milk, ought not to come in contact with any impurities whatever, whether that be in their neighbourhood, or in the air which surrounds them. Attention to this last matter is, perhaps, as important as any.—J. ROBSON.

DRESSING CHRYSANTHEMUMS FOR EXHIBITION.

As the Chrysanthemum Shows are approaching, I shall feel obliged by your allowing me to call attention to the *modus operandi* adopted for making these flowers presentable. I allude, of course, to the "eye-extracting, trimming, and dressing,"—a system practised by all exhibitors, and generally considered legitimate, but which, I contend, is anything but fair or honest.

The year before last, I had some splendid flowers, which I took to a Show, thinking they might obtain, if not a prize, at least commendation; but they were laughed at, and scarcely considered fit for the most obscure corner. I, therefore, at once consigned them to a dark, dusty chamber, whilst I took a peep at the Exhibition-room, where I discovered the secret of my failure,—my flowers had not been dressed, they were *au naturel*. The room presented a curious sight (it was prior to the Judges' arrival), every exhibitor being armed with tweezers, steel, and ivory, with which the dishevelled petals were displaced or placed, strongly reminding me of a hair-dresser's saloon.

Last year, I tried again, as a "maiden" only, and gained a prize for six flowers. These, against my will, however, were "trimmed, dressed, and eye-gouged," a friend assuring me that, if I wished to compete with success, this course must be gone through. All doing the same, I reluctantly consented, stating my intention to take opinions upon the honesty of such a practice.

I remember one flower especially, with a large eye, or centre, and as hollow as a teacup, which I was going to throw away as quite useless; but my friend interposed, with, "What are you going to do, man? that's one of the best flowers you can have for exhibition; give it to me, and you shall see." To work went the tweezers; the eye, or undeveloped petals, were quickly extracted; the full-grown petals curled and arranged; and the flower then put into a wooden tube, through which it was tightly drawn, bringing it up incurved, and as even as a cricket ball. What a contrast to the *déshabille* appearance it before presented. The worst flower became the best!—a very pretty manipulation, doubtless. But was it honest? Was it not an imposition? I think it was.

The practice is a deception at the Show, and also upon the public. Visitors go, they see magnificent flowers, are tempted to give orders, fully expecting to grow similar ones, and are much surprised and disappointed to find their productions as unlike those exhibited as "chalk from cheese." The flowers at Exhibitions are, in point of fact, works of art.

These observations apply to the Asters at the last Crystal Palace Show, where several were actually spoiled in appearance by the bad dressing.

Exhibitors, in favour of this practice, say that Chrysanthemums shown *au naturel* would not be worth looking at (this I do not admit); and if shown as grown no one would come to see them. Then why show such flowers? The study ought to be to grow them perfect.

I contend, further, that in awarding prizes, they ought not to be given for the flowers, but to the best *dresser* of the flowers. If you coincide with my views, I shall esteem it a favour by your approval of them, and censure of the artificial process. If, on the contrary, you think the "trimming, dressing, and eye-extracting," fair and legitimate, I shall feel obliged—having a great number of flowers preparing for exhibition at four different Societies—by your recommending me a dresser of first-rate experience, in order that I may be successful. I am not a clever Chrysanthemum manipulator; nor have I the time, being told that dressing one flower will sometimes occupy four hours!

Perhaps a good feather dresser, or a first-rate *ciseleur*, might answer; or, possibly, the good man, who at a late cattle show in the north inflated the hollow haunches of his ox, and also fastened on, with gutta percha, a pair of false horns,—by these clever means obtaining the first prize,—might not object to turn his hand to flower trimming. I want a prize, honestly though, so please assist me with your advice:

I know for a fact, that exhibitors who gain the first prizes employ men to dress their flowers.—WILL WORTH.

[Repeatedly have we condemned the practice of dressing flowers for Exhibition. There is no detraction from the merit of a cultivator, if he restores to its natural position a petal accidentally displaced; but, to cut and trim a flower in the modes pursued by Chrysanthemum and Dahlia growers at once destroys all real title to commendation, so far as growing symmetrical flowers is concerned. At the same time, there is no dishonesty in such trimming, because it is allowed. The folly is, that it is allowed, and that prizes should be given for its successful practice.—EDS.]

DATURA WRIGHTII, OR METELOIDES.

"A VERY fine new Californian species, growing to the height of four or five feet, and producing, in abundance, flowers six inches long, and of four inches diameter at the mouth; the colour, pure white, shading into lilac-blue at the margin. This noble plant appears to be a nearly hardy perennial, but may be treated as a half-hardy annual, as it flowers the first year from seed. The roots, which are very fleshy, require at most but slight protection, and may either be dug up and preserved in sand, or be left in the ground, and covered with a few ashes. Price, 6d. per packet."

I send you, from the catalogue of seeds published by Mr. W. Thompson, of Tavern Street, Ipswich, the above description of *Datura Wrightii*, about which you seek information. I have followed the instructions given this year,—sowing the seeds in March, on a hotbed, and planting out in a warm situation in May. They are now about three feet high, have bloomed profusely, and are admired by all who have seen them. The flowers have been quite equal to the size mentioned in Mr. Thompson's description. I intend potting them for the winter. I have, also, at Mr. Thompson's recommendation, grown successfully two other plants, which, I believe, are not generally known to be suitable for out-of-door cultivation, namely,—*Canna coccinea vera* and *Canna gigantea*. They are remarkably effective, and give a tropical appearance to the flower border. They seem to require plenty of moisture, and evidently luxuriate in an occasional dose of liquid manure.

I have a plant of the splendid new *Clematis lanuginosa*, on a south wall, which is now in full bloom, for the second time this season. It was planted last November, and is now about four feet high. Would Mr. Beaton recommend its being cut down, as he has strongly done in the case of *Clematis Sieboldii*?—THOMAS SIMPSON, *Mayfield House, Wolverhampton*.

CELERY CULTURE.

SOME seven years ago there happened to be an old sawpit near the garden where I was employed. In the bottom of the pit there was a foot and a half of sawdust, which had lain there some years. I took this, and equal quantities of good rotten manure and fresh loam, to form a compost, both for pricking out and for trenches. I put about half the quantity I intended to use in the trenches at planting time. I then planted, and allowed the plants a month to grow, and then added the remaining half. I gave the plants a dose of weak liquid manure once a week, from the time of pricking out to the second time of earthing. I was so well satisfied with the result, that I endeavour to get the same materials for my main crop every season.

I have tried numerous plans for blanching, and the most effectual, I consider, is to get some clean, fresh sawdust, and to put a handful into the heart of each plant, when they are earthed nine inches high, and repeat it every time of earthing. Snails and other things do not go down the inside when they are so treated, and the heart of the plant can push itself up, the materials being light. It is rarely that I find a rotten heart, or hollow sticks, in my crop.

The next best mode of blanching is by two pots, like half drain-

ing tiles, placed one on each side of the sticks of Celery, and tied together with string; but snails and other unwelcome guests walk comfortably down, and too frequently disfigure the hearts of the plants.—JOHN HAGUE, *Gardener, Groby Lodge, Ashton-under-Lyne.*

MERITS OF AN ORCHARD-HOUSE.

HAVING gathered almost all the fruit in my orchard-house, I can say nothing of the kind ever gave me so much satisfaction. From early spring, when the house was a mass of bloom, and when in a beautiful climate (without the heat and damp of a hothouse, with plenty of fresh air, but no cold, cutting winds), I enjoyed marking the minute differences of leaf and bloom, till the ripe fruit hung in all its beautiful variety. It has been one continued pleasure. Not one of the numerous persons who have tasted my Peaches, Nectarines, and Apricots, but allowed that they never tasted such fruits from walls,—such bags of juice, such tender flesh, such vinous flavour. Though very beautiful, and covered with fruit, I cannot think Plums are improved by the orchard-house. They were hardly so good as those from walls; and the Pears were decidedly worse, and, except in a bad climate, or to prove a new variety, I should think it a pity to take up an orchard-house with them, when the space might be so much better occupied with Apricots, Peaches, and Nectarines. A large number of Strawberries, in pots, may be grown, of delicious flavour, with very little trouble, as they stand amongst the fruit trees, and can be removed when the fruit has been gathered. My object being to fruit as many good varieties as possible, we potted some of every sort we grow, and the result was, that, from the ripening of the early Nutmeg Peach to the present time, when the varieties of Late Admirable are hardly ripe, we have had a constant succession of fruit. Many of the trees, though only potted as maiden trees, quite cut down at the time, in the spring of 1857, have this year ripened from twenty-five to forty fine fruits each.

Can anyone compare a collection of small trees growing naturally in pots, their branches loaded with fine fruit, coming into use for three months, with a house in which six or eight Peach trees, trained under the glass, take up all the room? In the first case, you have beauty, variety, and length of time, during which you have the pleasure of having, at all times, a few Peaches for a friend; in the latter, you have a great many of one kind, all ripe at once; and, if you grow fruit, and possess a garden, merely for ostentation, then you can send them to market.

Whether we consider the orchard-house as a producer of fruit of fine quality, or, when built near the house, as an agreeable place to walk in during March winds, or wet weather, or for a place of exercise for the delicate in health, or where you may enjoy a cigar, without annoying others, it is equally enjoyable, at least so say my friends, who have many of them helped me to pass judgment on the new varieties, and think they will have to do so for some years before I ought to depend on my own opinion.—J. R. PEARSON, Chilwell.

RETARDING PEACHES IN ORCHARD HOUSES.

THE mode by which Peaches are retarded in orchard-houses, and their exquisite flavour retained, is as follows:—The trees, in pots, are removed early in June, to a span-roofed house, fourteen feet wide, and four feet high at its sides. The walls are formed by two hedges of Siberian Arbor Vitæ. In sunny weather, when the air in the house becomes heated, such an abundance of air rushes in through the hedges, that mid-season Peaches are retarded two or three weeks, and later Peaches, such as the Walburton Admirable, till the middle or end of October, still retaining a great portion, or all their flavour.—THOS. RIVERS.

DOUBLE PETUNIA BEDDER.

IN THE COTTAGE GARDENER of September 28th, at page 411, Mr. Beaton expresses a doubt about the new double Petunias succeeding as bedding plants. Will you allow me to inform him that I have just seen two beds of a double purple variety, at Culford, near Bury St. Edmunds, flowering even more profusely, and certainly making more handsome beds, in my opinion, than any of the single-flowering varieties that I have seen?

The soil there is of a light nature, which may be favourable to

that description of flower. The variety was named the *Redcross Banner*, and said to have been sent out by the Messrs. E. G. Henderson and Son, of the Wellington Nursery.—H. F.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 10.)

APPLES.

[D. signifies that varieties so marked are to be used only for the dessert; K., for culinary purposes; and C., for cider-making. Those marked K.D. are applicable either to culinary or dessert use.]

Cox's ORANGE PIPPIN, D.—Medium sized, roundish-ovate, and regular in its outline. Skin greenish yellow, and streaked with red in the shade, but dark red where exposed to the sun. Eye small and open. Stalk half an inch long. Flesh yellowish, very tender, crisp, and juicy, with a fine perfume. A first-rate dessert apple. October to February.

Cox's POMONA, K.—Above the medium size, sometimes large, ovate, and somewhat flattened and angular. Skin yellow, and very much streaked with bright crimson. Eye slightly open and deep. Stalk an inch long, deeply inserted. Flesh white, tender, delicate, and pleasantly acid. October.

CROFTON SCARLET, D.—Medium sized, flattish. Skin yellowish russet, bright red and russety next the sun. Eye wide. Stalk short. An abundant bearer. October to December.

DEVONSHIRE QUARRENDEN, D. (*Red Quarrenden, Sack Apple*).—Medium sized, round, compressed at the ends. Skin deep crimson. Stalk short and deeply inserted. Eye with long segments, very shallow. Flesh greenish white, crisp, juicy, and pleasantly sub-acid. A good bearer. "No better autumn fruit." August.

DEVONSHIRE QUEEN, K.D.—A fine, large, ovate fruit, entirely covered with rich, dark crimson, and a delicate bloom. The flesh is sometimes tinged with red, and is crisp, juicy, and balsamic. October.

Ditton Nonpareil. See *Braddick's Nonpareil*.

DOWNTON PIPPIN, D.—Larger than the Golden Pippin, roundish, flat at the ends. Skin yellow. Stalk short and deeply inserted. Eye in a wide and shallow basin. Flesh yellow, sharp, and richly flavoured. A seedling from the Golden Pippin. November to January.

DRAP D'OR, K. (*Bay Apple, Early Summer Pippin*).—Rather large, roundish, narrowing towards the eye. Skin yellow, dotted with brown specks. Stalk short. Eye shallow. Flesh crisp, juicy, and of a pleasant mild flavour. October to December.

DUCHESS OF OLDENBURGH, D.—Medium sized, roundish. Skin rich yellow, streaked with red. Eye large, nearly closed, set in a wide hollow. Flesh rich and juicy. September.

DUMELOW'S SEEDLING, K. (*Normanton Wonder, Wellington*).—Large, round, and compressed at both ends. Skin yellow, light red next the sun. Stalk very short. Eye large and open. Flesh yellow. A good bearer, and an excellent kitchen apple. November to March.

Dundee. See *Golden Reinette*.

DUTCH CODLIN, K. (*Chalmers' Large, Glory of the West*).—Very large, irregularly roundish, or oblong, with prominent ribs extending from the base to the eye. Skin pale greenish-yellow, slightly tinged with orange, red next the sun. Stalk short and thick. Eye set in a deep angular basin. Flesh white, slightly acid. A good bearer, and one of the best kitchen apples. August to September.

DUTCH MIGNONNE, K.D. (*Copmanthorpe Crab, Stettin Pippin*).—Rather large, roundish, and handsome. Skin dull orange, half mottled with large yellow russet specks.

Eye open, deeply set in a round basin. Stalk an inch long, deeply set. Flesh richly aromatic. A great bearer, and one of the most desirable apples for any garden. December to April.

EARLY HARVEST, D. (*Yellow Harvest*).—Medium sized, round. Skin clear pale yellow. Eye small and closed. Stalk half an inch long, not deeply inserted. Flesh white, tender, crisp, juicy, with a pleasant refreshing flavour. A first-rate early dessert apple. July and August.

EARLY JULIEN, K.D.—Medium sized, roundish, and slightly flattened. Skin pale yellow, with an orange tinge next the sun. Eye closed. Stalk short. Flesh yellowish white, crisp, very juicy, with a fine brisk and rather balsamic flavour. An excellent early apple. Ripe in the second week of August.

EARLY NONPAREIL, D. (*Hicks' Fancy, New Nonpareil, Stagg's Nonpareil*).—Small, roundish, narrowing towards the eye. Skin greenish yellow, changing to deep yellow as it attains maturity, russety, and spotted with grey spots. Eye open, set in a wide basin. Stalk short and deeply inserted. Flesh yellowish white, crisp, juicy, brisk, and aromatic. October to December.

Early Red Margaret. See *Margaret*.

Early Summer Pippin. See *Drap d'Or*.

Easter Pippin. See *French Crab*.

Edmonton Aromatic. See *Kerry Pippin*.

Elizabeth. See *Golden Reinette*.

EMPEROR ALEXANDER, K. (*Aporta, Russian Emperor*).—Very large, heart-shaped. Skin greenish yellow, streaked with bright red next the sun. Eye large and deeply set. Stalk slender, an inch long, much inserted. Flesh yellowish white, rich, juicy, and aromatic. A very handsome apple. September to December.

ENGLISH CODLIN, K.—Large, conical, and irregular in its outline. Skin fine yellow, with a faint red blush on the side exposed to the sun. Eye closed. Stalk short and stout. Flesh white, tender, and agreeably acid. August to October.

English Pippin. See *Golden Reinette*.

Fall Pippin. See *Reinette Blanche d'Espagne*.

FEARN'S PIPPIN, K.D. (*Ferris' Pippin, Clifton Nonesuch*).—Medium sized, round, flat at the ends. Skin greenish yellow, russety round the stalk, and bright red next the sun. Stalk short. Eye shallow, in a plaited basin. Flesh greenish white, sweet, and richly flavoured. A good apple. November to February.

FEDERAL PEARMAIN, D.—Below medium size, pearmain-shaped. Skin yellowish, with a little red, and a few dark streaks on the side next the sun, russety. Eye deeply set. Stalk half an inch long. Flesh fine, delicate, very juicy, and of excellent flavour. A first-rate apple. December to March.

Five-crowned. See *London Pippin*.

(To be continued.)

GYNERIUM ARGENTEUM.

NOTWITHSTANDING the fact, that this fine plant has been greatly talked about, and has been brought before the public so frequently, still it is comparatively little known in the country; many a gardener is yet without a plant of it. What can be the cause of this mistake? Is it in consequence of the term Pampas Grass, instead of *Gynerium argenteum*, being applied to it, that those who have not seen it, and can only read of its existence, think it a mere Grass? If so, those who unfortunately fall into that opinion make a very great mistake.

While taking a tour from London to very near the Land's End, during the first week in September, I remarked the extraordinary fact, that I only saw in two places any good plants of this great lawn beauty. One of these places was a private garden, belonging to a Mr. Dulhunty, of Paignton, in the south of Devon; and, on inquiry of that gentleman, I found that the plant had only been planted in the spring of 1857, and was turned

out of a nurseryman's three-inch pot, a miserable mite; while, on the first Sunday in September, 1858, the plant was, without exception, the greatest beauty I ever saw. The plant itself, without the flower-stem, was as round as a dumpling, the leaves long and regular, rising about four feet and a half, and falling with a graceful curve, and this every part alike,—not a large cluster of leaves at one place, and none at others, but as true as if every one of the thousands of leaves had been placed by the hands of a clever artist. From this elegant mass of bright green foliage stood twenty-eight spikes of its inflorescence, waving in the air like plumes spangled with silver, and these spikes, as nearly as possible, were all the same height,—just ten feet from the ground,—and as regular as any one could devise.

Thinking there must have been some peculiar mode of cultivation adopted, I was induced to ask the gentleman (who evidently is a very great gardener, or very fond of his garden, which was as neat as a new pin) how long it had been there, and if the plant had any particular soil or treatment given it, when I was assured that it was planted in the ordinary style,—a moderate-sized hole dug out of the turf, and the size of the space in the turf increased, as the plant grew to the extent of ten feet over, and that it had but little manure at first, the ground being very good of itself. But last spring Mr. Dulhunty determined to return to Sidney early this autumn,—and, that he might see what the plant would do before he left, and as he was anxious that it should be in bloom by the 1st of September,—nearly a month before the usual time,—and, to increase the growth and hasten its progress of flowering, a simple plan was adopted, viz., from April till July the plant was fed with some very strong manure-water once every week; and by this simple attention the plant was not only brought to perfection before the rainy season set in, and thereby its beauty spoiled much sooner, but it was made one of the handsomest objects I ever saw.

Can any one else boast of a plant, only fifteen months planted, producing twenty-eight spikes on the one plant?—F. B.

[A sketch of the *Gynerium argenteum* was published in our 443rd number.]

HARDY PLANTS BLOOMING, DURING SEPTEMBER, IN THE ROYAL GARDENS, KEW.

SAXIFRAGACEÆ.—*Heuchera Americana, H. villosa*.

PRIMULACEÆ.—*Lysimachia ephemerum; Androsace lanuginosa, A. lactea*.

LINACEÆ.—*Linum pubescens*.

COMPOSITEÆ.—*Aster Novæ-Anglie, A. Novæ, var. rubra, A. Novæ-Belgii, A. Novæ, var. floribunda, A. squarrulosus, A. lavigatus, A. simplex, A. Sikkimensis, A. Cabulicus, A. turbinellus, A. laxus, A. levis, A. elegans, A. purpuratus, A. scoparius, A. versicolor; Palafoxia Texana; Brickelia grandiflora; Emilia coccinea, E. sagittata; Senecio chrysanthemoïdes; Centaurea tenuiranea, C. ovina; Stokesia cyanæa; Pyrethrurus uliginosum, P. Parthenium, P. Parthenium, var. plena; Thelypterum brachystelma; Antennaria trinervis; Solidago pubescens, S. tenuifolia, S. stricta, S. scorzonerafolia; Brachychæta cordata; Inula barbata; Helianthus orgyalis; Echinacea purpurea, E. intermedia, E. serotina; Rudbeckia fulgida, R. laciniata, R. grandiflora; Helopsis bapthalmoides.*

VERBENACEÆ.—*Verbena venosa*.

LABIATÆ.—*Monarda cristata; Satureja montana; Salvia Habliziana, S. napolitana, S. prunelloides, S. hastata*.

MALVACEÆ.—*Hibiscus Cashmerianus; Malva crispa*.

ROSACEÆ.—*Potentilla pulcherrima; Rosa bracteata*.

ASPHODELEÆ.—*Kniphofia Burchellii, K. media*.

GRAMINEÆ.—*Gynerium argenteum*.

ON THE MOST DESIRABLE SIZES FOR BARS AND BAR HIVES.

THE question having recently been raised in THE COTTAGE GARDENER, as to the most desirable sizes for both bar hives and bars, I am induced to give my experience on the subject. First. With regard to the sizes of hives, I feel convinced, from a very extensive experience, that the size of a hive should bear some proportion to the productiveness of the country. A very broad hive may be used profitably in places where there is a most abundant bee pasture, and in those heather districts where honey-gathering goes on for two months after it has ceased in the

cultivated lands; but, for ordinary situations, such as my present locality, I am quite convinced that a seven-bar hive is superior to one of eight bars. I have, therefore, lately had all my bar and slide hives made with seven bars, feeling the desirability of keeping to one pattern. I think seven-bar hives more adapted for general use, inasmuch as they answer well in a moderate locality; and, when used in a good one, with good swarms, they can always be increased in size, to any extent, by adding boxes above or below the original stock, as may be required. Again, seven-bar hives, with a shallow top box, are well adapted for carrying out the method of honey gathering recommended by the younger Wildman, a plan which is deserving of a much more extensive employment than it receives.

This plan consists in placing a very good swarm, or two if weak, in a hive with a small top box, which, in favourable seasons, can be removed in six weeks, with ten pounds of honey, almost equal in quality to that furnished by an old stock supered. In fact, if this top box has been rapidly filled, the central comb alone will show signs of having had brood in it.

As to the assumed greater concentration of heat, in winter, in a broad eight-bar hive, I believe the supposition to be erroneous. Heated air always ascends, and, when spread over the large surface of a broad hive, cannot be so concentrated as in a deeper and narrower one.

With regard to the width of bars, I am quite sure that Golding's measurement is correct,—namely, one inch and one-eighth for the bars, and half an inch for the spaces or slides between.

The correspondent who sends such interesting details from Devonshire questions this, stating that in a hive a foot square eight combs will always be built. My experience is against his. In my own bar hives, which are of the measure above stated, I never find eight combs, even when guide comb is not put in,—I mean, not eight regular combs; often, however, one comb thins away at one part, and there is a small piece put in to supply the deficiency. I have worked with German bar hives with narrower bars, and always found that I got very often one comb on two bars. Having some scores of hives at work, of the seven-bar pattern, I do not speak without data, and would urgently protest against the use of any bars narrower than one inch and one-eighth, or of spaces less than half an inch.

I have just performed an experiment, which places the superiority of bar hives over all others, in a very strong point of view. Wanting to stock an additional observatory hive for this winter's inspection, I placed it alongside one of my bar and slide hives. Withdrawing the slides, I lifted out the bars in succession, with the combs and bees attached, and placed them in the observatory hive,—the whole operation not occupying ten minutes, although the stock was very strong, having had the bees from two straw skips previously added to it.

Four pounds of syrup were then given by way of enabling the bees to secrete wax to repair any damage, and cement the combs to the sides of the new hive; and the next day all was going on as quietly as ever, with this difference, that the opaque wooden box had become transparent, with non-conducting sides of so perfect a character, that the hive is not covered over, even during winter.—W. B. TEGETMEIER, *Muswell Hill, W.*

DIOSCOREA BATTATAS.

I SEE, in your Notices to Correspondents, in THE COTTAGE GARDENER of September 14th, you state that you have never seen *Dioscorea Battatas* in bloom. Mine are covered with blossom. It very much resembles the bloom of the Grape. Are you aware that the leaves of the plant contain more mucilage than those of any other plant with which I am acquainted? Can it not be turned to advantage?—THOS. SCOTT, *Vendaceburn Cottage, Lochmaben.*

NOTES FOR THE FLOWER GARDEN.

Now is the time when all are busy, or ought to be, in arranging the colours, and preparing stock for the flower garden next season. By far the best plan is, first, to decide finally what your intentions are, then to prepare abundantly for carrying them out, by propagating only what is really wanted. When bright colours are preferred to variety, let your selections of plants be as distinct in colour as possible, particularly if your object is ribbon-beds or borders, which are quite, and justly, the order of the

day. Never attempt what is called shading, particularly if the beds be surrounded with grass, the green of which will well harmonise with, and soften the brightest of colours. True, all have some particular taste peculiar to themselves, which renders it impossible for me to lay down any particular law for the arrangement of a flower garden *parterre*, &c.; still I have observed, within the last season or two, a general partiality for some particular beds of colour as arranged, and will be pleased, as far as possible, to lay them before the readers of THE COTTAGE GARDENER, with an example or two to show where the attraction lay, the chief secret being, not to have, as is generally the case, one colour with, but a shade different in, the adjoining plant or row.

EXAMPLE FIRST.—For a long border,—say, eight feet wide,—begin with eighteen inches of *Cerastium tomentosum*, or variegated Alyssum; eighteen inches of *Tom Thumb*, Scarlet Geranium; twelve inches *Aurea floribunda*, Calceolaria (by far the best of the orange colour); eighteen inches, *Punch Scarlet Geranium*; twelve inches, *Calceolaria amplexicaulis*, yellow; backed with eighteen inches of *Perilla Nankinensis*, purple, a useful plant, well adapted for a background.

For a border, or bed, of the same width, twelve inches *Cerastium tomentosum*, white; eighteen inches, *Purple King Verbena*; twelve inches, *Mrs. Holford Verbena*, white; twelve inches, *Mangles' Pink Variegated Geranium*; twelve inches, white Verbena; eighteen inches, purple Verbena; and twelve inches, *Cerastium*, as on the opposite side.

This I believe to be an improvement upon the best bed in the kingdom. I wish it to be understood, that I would not confine the gardener to the plants here enumerated; they are only given as an example of what the colours must be, and their relative position to each other.

The present article may appear unseasonable, but I believe there is no more befitting time than previous to preparing stock for planting. It is by far the best to get ready the plants for your previous arrangement, than be necessitated to arrange according to your stock of plants, which is too often the case.—*HORTULANUS.*

QUERIES AND ANSWERS.

LUXURIANT LAMARQUE ROSE.

"I planted a *Lamarque* Rose against the side of my house, facing east, last November. It flowered in August, and has now thrown out strong shoots, some of them twelve and fifteen feet long. Will you inform me when, and to what extent, I shall cut it in?"—V. A. M.

[How different from those who can hardly keep their old Roses alive, in such a season as that of last summer, as, for instance, Dr. Lindley, according to his own showing. We have never heard of *Lamarque* doing so prodigiously the first year, and, unless you are quite sure of the kind, you will be disappointed, and find you have one of the *semperflorens* climbers, instead of *Lamarque*. The same rule applies to the pruning of them when they are so vigorous. Do not touch it till the first week in April, —then cut off five-feet from the fifteen-feet shoots, and four feet from the twelve-feet shoots. If there are weakly shoots, cut them out entirely this month. The rule is safe for all strong climbers.]

ERECTING AND HEATING A LEAN-TO GREENHOUSE.

"I wish to erect a greenhouse in my reserve garden, to be used chiefly for preserving bedding plants through the winter. I propose that it should be a lean-to, as I have a wall in the garden facing south, against which I might build it. It is to be twenty feet long, twelve feet wide, and six feet high in front, two feet and a half of which is to be brickwork. For these dimensions, to what height of the back wall should we go for the pitch of the roof? For ventilation, I am thinking of making openings (without shutters) into a back shed, these openings to be three feet by one foot in every four feet of wall, and to be made just below the wall-plate, after the fashion of Rivers' orchard-houses. Now, I suppose this amount of ventilation would not be sufficient; and, if so, can I get it more effectually without having it from the roof, or from the part of the front which is glass, both of which I desire should

be fixed, if possible? I think of heating by a flue, entering into the house at its north-west angle, from a furnace to be built in the back shed. Or, would you have the furnace so placed in the shed that the flue may enter the house at the middle of its back wall? Having had no experience in these matters, I shall be greatly obliged by your telling me in your next COTTAGE GARDENER (as I want to begin building at once), how far I am right in what I propose, and supplying me with the information I seek, and any other you may think may prove useful to me in building a house to be used for the purpose named, at the least possible cost."—VIRIDIS.

[The height of the back wall of such a house should be ten or eleven feet, which will give a good slope to your glass. If that should be too high, you might have a short hipped roof, from a height of eight feet or so, meeting the longer roof at a height of nine or ten feet; or, springing from the back wall, at a height of six feet, you might have a span-roof, the greatest height in the centre being nine or ten feet. These modes would, however, entail the expense of a gutter at the back, which the sloping roof, coming at once from the wall, would not do. Your openings at the back will give you enough of top air, if the shed is not kept close in summer. But, how about the absence of shutters in winter? Your flue will have more to do, if the shed must be kept as warm and comfortable as the greenhouse. Shutters would obviate that. Opening the door at one end, and a window at the other, would be almost sufficient for bottom ventilation; but to make sure of plenty of air, you could have two small ventilators in the front wall below the glass frames. The flue had better cross one end, pass along the front, and cross the other end. If you did not intend forcing, a small flue would be sufficient; and if you chiefly burned coke and cinders, you would have little annoyance from smoke.]

PREPARATION OF FLOWER BEDS AT PUTTERIDGE BURY.

"Having visited Putteridge Bury a few years ago, and then greatly admired every arrangement there, I was pleased to see a notice of these beautiful gardens in THE COTTAGE GARDENER of the 7th September. As my own flower garden is similarly placed in rather an exposed situation,—chalky soil, &c.,—I should gladly hear what compost Mr. Fish thinks best to use in the beds for the bedding-out plants. Also, whether it is necessary to put clay in Rose beds, made on the turf pincushion fashion? My standard Roses (some of them) have lost nearly all their leaves, and some others are yellow and black; while, in the same rosemary, others have made good shoots since the summer, and have flowered well. Would it be better to move the Roses that do not look well into the new pincushion beds I am about to make, and to plant others in their places? Paul Joseph and Général Jacqueminot are looking very bad."

"Can any one inform me where I can get a pink Mimulus? It is hardy, flowers very freely, and has a strong scent. I have inquired, without success, at several nurseries."—E. H.

[Although Putteridge Bury is in a chalky neighbourhood, the soil in the flower garden is chiefly a stiffish loam, resting upon clay, and that, in general, of no great depth to the chalk. At distances of a few yards the staple is not a foot in depth to the chalk. In the sunk flower garden much clay, &c., had to be removed, and a thickness of two feet, or so, of compost placed over the bottom, consisting of the surface-soil in the neighbourhood, with nearly an equal proportion of sandy loam, obtained from the thrown-up hillocks by the wayside. No peculiar compost is used for the beds; and changing the soil to any extent is out of the question, without breaking in upon economy in management. Road drift and rotten leaf mould are the chief auxiliaries, and these used in no great proportions. The chief dependence is placed on these simple matters of routine:—

1st. Stirring the soil to a good depth, but bringing up little or none of the subsoil near the surface, though breaking a little into that subsoil, and leaving it in the bottom when well stirred. The surface-soil is just a little incorporated with the soil a little further down. One object of this is to keep the richest soil at the surface. Another reason for deep stirring is, that the plants may be next to self-dependent for moisture as soon as they begin to grow; whilst the poverty of the under-soil prevents extra luxuriance.

2nd. A heap is made up of sifted road drift,—the sandier the better,—and rotten leaves, when they can be got, also sifted; and,

in planting, a small handful of this is placed round each plant, just to give them a start.

3rd. Before planting, the beds are turned over in winter, if empty. But more care is paid to turning them frequently in warm sunny days in April and May, so that the ameliorating influence of as many sunbeams as possible may be incorporated in the soil.

4th. Unless from necessity, in a period of wet weather, the planting is never performed, except when the soil is mellow, sweet, and dry; and care is taken that the surface is left sufficiently loose.

5th. From not changing the soil, it is deemed advisable to change the cropping every year, and this of itself tends to give the same beds a fresh appearance. When this is not done, some soil is taken away, and soil, either from other beds, or fresh, if it can be got, taken to supply the place of that removed.

6th. In the case of Pelargoniums, &c., except just to give a start at first, luxuriance should be avoided, by keeping the soil rather poor. When extra strength is required, and keeping in moisture, too, a consideration, mulching on the surface is resorted to, instead of incorporating much manure in the soil. This mulching with riddled rotten dung and leaves is only done after the soil has been well heated. It keeps in moisture and keeps out extra heat, and half an inch in thickness has kept Calceolaria beds all right in scorching weather, when beds not so used were withering and dying from drought.

Moving Rose plants is a good plan for giving them fresh vigour. Nevertheless, we would prefer new plants for your new beds. If the soil is chalky, a little heavy loam will do the plants good, as also pretty liberal surface-mulching,—but that you cannot well manage with pincushion beds.

We do not recollect a pink Mimulus: *roseus* is a rose colour, and is perfectly hardy as an annual. If you were to sow a packet of seeds of *variegatus*, &c., you would likely get a pinkish one among them. We know of no cure for Roses losing their leaves, except rich, liberal treatment, and plenty of water in such seasons as the last has been. Though we use such standards with flowers, it is because we cannot help it. Roses do not group well with bedding plants, just because they are not continuous enough in blooming; and when the leaves get shabby, as in the manner spoken of, they mar the general effect.—R. FISH.]

PRESERVING A BED OF PANSIES.

"I have a bed of Pansies, with from thirty to forty varieties. The plants are all fresh and healthy. The other day, having occasion to cut a few blooms, I was horrified to find that there was not a perfect flower in the bed, every one being more or less abused with snails or earwigs. Can you recommend a remedy for these pests? There are a great many Pansy-growers in this neighbourhood, and it is proposed, by some, to grow them next season in beds raised several inches, with a wood-edging, round which a zinc trough is to be fixed, to be kept always full of water. Others, again, are for getting an affair made like a bottomless flower-pot, six inches in diameter, by three inches deep, with a flange outside; the flange, like the zinc trough, to be kept always full of water, to place round each individual plant. Have you any idea which of these is likely to prove most efficacious, or could you recommend some more simple remedy? Will Pansies, recently struck, if planted out just now, stand over the winter without protection?"—PANSY.

[We should like to protect your young Pansies in severe weather, by sticking evergreen branches firmly among them, or, in severe frost, placing a garden-pot over them,—doing this after the ground was frosted. We have no doubt that the plans you suggest will be effective, but only if the water is always present,—a little gas-water would be an advantage. As a simple remedy, we would recommend clearing away a little of the surface of the bed,—say, from half an inch to an inch deep,—forking over with a pointed stick, or small fork, replacing with fresh soil, and sprinkling the surface all over with quicklime, doing this repeatedly on a damp morning. In addition, place down brewer's grains, or buttered tender leaves of Cabbage, to entice the slimy visitors; and use hollow bean-stalks, &c., and small pots, half-filled with dry moss, to entice the other depredators; and look after both early in the morning, if you cannot well look after the slugs before bedtime.]

NEW AND RARE PLANTS.

INGA MACROPHYLLA (*Large-leaved Inga*).

This handsome stove shrub is a native of Peru. It produces beautiful heads of yellow flowers in April. Introduced in 1849.—(*Botanical Magazine*, t. 5075.)

OUVIRANDRA BERNIERIANA (*Bernier's Lattice-leaf*).

This native of the lakes of Madagascar was discovered by the Rev. Henry Ellis, and has been flowered by Messrs. Jackson and Son, of Kingston Nursery. It is a beautiful stove aquatic.—(*Ibid.* t. 5076.)

ÆSCULUS CALIFORNICA (*Californian Horse Chestnut, or Buck-eye*).

This tree bloomed in the nurseries of Messrs. Veitch and Sons, during July, in 1858. Its dense clusters of flowers are white in this country, but were pink when observed growing naturally in California. It blossoms whilst young, and is considered hardy.—(*Ibid.* t. 5077.)

ENOTHERA BISTORTA; var. VEITCHIANA (*Mr. Veitch's Twisted-fruited Enothera*).

This was sent by Mr. W. Lobb, from South California, to his employers, Messrs. Veitch. "It promises to be one of the best of any yellow-flowered plants for bedding out, the stems being of humble stature, and the flowers large, numerous, and copious in succession."—(*Ibid.* t. 5078.)

TRADESCANTIA DISCOLOR; var. VARIEGATA (*Variegated Purple-leaved Spiderwort*).

Native of Mexico. The rich purple of the under-side of the leaves is very striking. "It is worthy of cultivation in every stove and warm greenhouse."—(*Ibid.* t. 5079.)

DATURA WRIGHTII.

EARLY in March last, I procured a packet of seed. After sowing, I plunged the seed-pan in moderate bottom heat, from which I raised three plants, one of which died before potting off. Like your correspondent, not knowing the treatment, I kept the remaining two in the seed-pan until May, then turned them out in the border,—one on each side of the walk entering the kitchen garden. Unfortunately, one of these, the strongest, I lost, as I suppose, by being pulled up in weeding. The plant left was very small, but, notwithstanding these adverse circumstances, has now attained the following dimensions—near four feet high, by six feet in diameter. On several occasions I have had six or seven of its splendid flowers open. At eve and early morn they are most attractive; they are then beautiful, both in appearance and perfume. As your correspondent justly observes, the flowers are very delicate in colour, their size rendering them very attractive. I have just now measured some of my flowers, and find them eight inches in length, and five in diameter, across the mouth of the cup: they are of a creamy white at the base, which extends to rather more than half the length of the tube, and gradually passes into a soft pale blue; this again gradually deepens in colour as it approaches nearer the margin of the cup, so that one can scarcely tell where one begins and the other ends. Although it may be grown for the conservatory, I do not believe this treatment at all necessary for the full development of the plant, as is shown above; but, on the contrary, may be made quite as interesting an object for the flower garden.

In order to attain that object, I believe the following treatment is all that is necessary:—Sow in a mild bottom heat in February; as soon as the seedlings can be handled pot off; encourage a liberal growth before planting-out time, by shifting when required, and keeping them in a warm greenhouse or frame; then gradually harden off in time for planting out in May. Any good garden soil, I believe, will suit them. As the plants progress they will require careful staking, as they assume quite a shrubby character, and the branches, being very succulent, are liable to break off by their own weight, if not attended to. Probably, others of your readers have been more fortunate in the cultivation of this novelty than is here related; if so, their system of culture will, I am sure, be gladly received by the readers of THE COTTAGE GARDENER.

"AMATEUR" appears to fancy this Datura wanting in gracefulness of habit, compared with pendent kinds. In this respect, as in

all others, I think we must allow nature to be the best architect of its own productions. Supposing it to hang its head in the gentle bashfulness of some of its sex, I think we should lose much of that beauty of colouring which your correspondent so justly admires.—STEPHEN AMEY, *Saling Grove*.

CATALOGUES RECEIVED.

IN the *Autumn Catalogue of a Choice Collection of Dutch and Cape Flowering Bulbs*, by James Carter and Co., High Holborn, London, our readers will find, not only ample descriptions of the different varieties, but judicious remarks on the cultivation of the different kinds of bulbs, and the prices annexed to each. Like all Messrs. Carter's catalogues, this is well got up, and exhibits their usual knowledge of the subjects to which they direct their attention. The *Catalogue of Hyacinths and other Flower Roots, imported direct from Holland by Milne, Arnott, and Co., Vauxhall Nursery, Wandsworth Road, London*, is a concise and useful list of the best varieties of flower roots; and, though the varieties are not numerous, they appear to have been selected with special attention to the excellence of the flowers.

VALUE OF LONDON SEWAGE.—The floods that hurry along the subterranean tunnels to the Thames consist of water and organic matters. The quantity of this mixture poured into the river daily is estimated, by Dr. Daubeny, at 95,000,000 gallons; and as 220 gallons weigh a ton, this may be calculated at 431,850 tons. When analysed with a view to ascertain its agricultural value, the very small percentage of solid matters first arrests the attention of the chemist, and, if valued for the solid matters only, London sewage would seem to be worth next to nothing. Here is one, and the chief mistake of those who advocate a wholesale conveyance to the sea. But, if we refer to what is doing in the agricultural world, we find that the greatest results are obtained by means of liquid manures, and that only in the proportion of its solubility is any solid manure of value. Take the London sewage as it is, then, and we have, in the daily discharge of 95,000,000 gallons, 624 tons of fertilising ingredients, consisting of ammonia 50 tons, worth, at £56 per ton, £2,800; phosphoric acid in earths, 8 tons at £7, worth £56; ditto in alkalies 11.5 tons, at £32, worth £368; potass 7 tons, at £31, worth £217; organic matter 188 tons, at £1, worth £188; making a total of £3,629, as the value of the materials daily cast in the Thames, and so lost for use, but set in action for wide-spread mischief. Multiply the weights by 365, and the yearly discharge amounts to 33,675,000,000 gallons, worth, according to Professors Daubeny, Way, and Hoffman, £1,324,585. In a former article, we stated our opinion that the London sewage was worth at least two millions a-year, and from the foregoing estimates—which are purposely stated at the least possible amount—we are confirmed in our opinion, that, when the refuse of factories, slaughter-houses, &c., is added to the products of human dwellings, there will be no difficulty in placing the value at £2,000,000. But we are content for the present argument to value it at only £1,000,000 a-year, which is a sufficiently enormous amount to be considered as annually thrown away by a system already sufficiently expensive.—*City Press*.

TO CORRESPONDENTS.

STEWARTON HIVES (*Mrs. Harrington*).—These may be had of Mr. Tegetmeier, Muswell Hill, London. We do not know where the Woodstock Alliance Hives can be purchased.

NAME OF ROSE (*J. M. D.*).—It is the *Souvenir de Malmaison*. The flower-buds are very apt to refrain from expanding where they are not in a very warm, sheltered situation.

VARIOUS (*Filix-mas*).—The best practical directions for Orchid culture are in a series of papers by Mr. Appleby, published in some former numbers of THE COTTAGE GARDENER. They may be had at our office. The last was the first number of a new volume. All the back numbers you mention can be had at our office.

SEEDLING DAHLIAS (*C. Oldham*).—They reached us faded, and in bad condition; but, after making allowances for this, we think they cannot compete with others as exhibition flowers. They will do as handsome border flowers.

SEEDLING VERBENA (*Lydiard House*).—This white flower, with a pink blush, and a good truss, is very delicate and pretty. We can say nothing of its usefulness to the gardener, however, from a cut flower. The habit of the plant requires to be known before determining that.

LIGHTENING SOIL (*J. G.*).—At Notting Hill you are on the London clay, the most difficult soil a gardener has to contend with. The best mode of rendering it friable will be to pare and burn one foot deep of the entire

surface. The resulting ashes to be dug in, together with all the drift sand, bricklayer's limey rubbish, and ground bones, you can procure.

LEAVING OUT SCARLET GERANIUMS (*J. P. S.*).—It is not safe to leave them out one day longer; but, perhaps, they may be quite safe as they are till Christmas, or the turn of the year. The safety depends entirely on the frost. The spirit of divination alone could reveal how long the frost will keep off, and how many degrees of it there will be when it does come.

CLEMATIS (*Tees Water*).—We are sorry we cannot guess which of the many kinds of Clematis you mean. In the first place, there are above seventy kinds of Clematis, and some of them are quite as different in looks as cows are from horses. The treatments of them are more different still, and to treat one of the kinds like some others of them, would just be like yoking pigs to a plough, or shearing horses for wool. Therefore, as the question stands, all we can say is, that it would not pay anyone on Tees Water, who is not a clever gardener, to attempt to strike any Clematis from cuttings, or to grow them well after being so raised. Grafting or inarching, or layering, and by seeds, are the best and most common ways of increasing them.

INDIAN CRESSES (*W. Melville*).—They are bad travellers, and yours, though well packed, arrived faded. No. 10, with small leaf, a cross between *Lobbianum purpureum* and *Melville*, is an excellent crimson flower. No. 11, a very dwarf yellow, tinged with crimson, would be a good bedding plant, we think. The others were too shrivelled for us to give an opinion upon; nor can we say, from these cut flowers, what the habit of the plants may be.

SALT TO PEACHES (*F. B.*).—We should syringe them with water having four ounces of salt in each gallon, as soon as the leaves have all fallen, and sow at the rate of ten bushels of salt to the acre on the borders in March. We believe salt is beneficial to all fruit trees.

GLASS EXPOSED TO SCHOOL BOYS (*Tyre*).—Do not incur the expense of very thick glass. Have a small-meshed galvanised wire net fastened at about an inch distance from the glass so exposed.

HEATING A SMALL GREENHOUSE (*A Subscriber*).—We believe the smallest of Weeks' tubular boilers costs about five pounds. Thomson's amateur's retort costs about two guineas, and a friend of great experience told us he had several, and liked them much. A small flue, either above ground, or below the floor, as sometime ago described by Mr. Fish, would answer your purpose very well. That would hardly cost more than the cheapest boiler alone, and, with the exception of the stokehole, not more than an iron stove. See what is stated of heating by these stoves, at page 416, of our last volume. That would be the cheapest, if you could depend on the management. The flue would be the next cheapest, and the heating could be all done outside. If the flue is set above the floor, there would be no necessity for sinking much for a stokehole. If we are not explicit enough, write again.

HOUSE FOR BEDDING PLANTS AND CUCUMBERS (*P. J.*).—You will want four ventilators in the front wall, two feet and a half long, by nine inches in width; but you must also have air, either at the apex of the roof or at the wall plate at the top of the back wall, or you will burn your Cucumbers in summer. The sash-bars and glass will do very well if that is attended to. Your pit, to the centre above the path, should not be less than eight feet; if nine feet, you will have more room for Melons and Cucumbers. Why not take the flue round the house on both sides of your walk, and enclose it in a chamber, with openings to let out the heated air, so as to obtain from it top heat and bottom heat at pleasure? We would prefer planting the Cucumbers over it, instead of a tan bed, the heat of which could not easily be renewed.

FUEL EXPENDITURE (*D.*).—In our last volume, at page 416, appeared an account how small a sum heated a house by an iron stove. We would only lead you into error, if we were to attempt to tell you what your house would cost with a common flue, unless we knew how your flue worked;—whether the stoker knew how to manage a furnace, as to its damper, &c., and could know the day of the month on which you commenced, the kind of weather you would have, and when you wished to cut. A week or two in time makes much difference in coal. At an average, we suppose ten or twelve pounds.

MELON GROWING (*W. C.*).—There have been many good articles on Melon growing lately, in addition to those to which you allude, in early volumes. We would comply, even now, with your request, but nobody thinks of planting Melons now; and, very likely, we would just have to reprint it all early in spring, and, though you would judge us favourably, there are others who would grumble, that there was so much repetition. The colour and state of the leaves, when the Melons are ripe, has not so much to do with getting good Melons, as some are inclined to suppose. If you plant early in spring, and intend that these plants shall produce two or more crops, then you must pay particular attention to keeping the foliage green and healthy; and this must be done by a pretty free use of water, even if that water should interfere with richness of flavour. If flavour is the great object, water must be withheld after the fruit approaches maturity; and that dryness will tell upon the leaves, and cause some of them to shrivel a little. Here, again, no extreme must be attempted; for, if the soil is too dry, and the atmosphere too dry and hot, the foliage will suffer greatly, and the flavour of the fruit, too, will be deficient. These matters were fully alluded to not long ago.

TO DESTROY MEALY BUG (*Fanny*).—The best thing you can do is, to get a close box, or frame, into your stove, and there keep all your new plants by themselves. Then prune back all your climbers, and wash them with soap water, and then with size water about 100°, and strong enough,—just that you may feel a slight stickiness when, after wetting your finger and thumb, and placing them together, you can separate them when cold. Wash all small plants, or dip them all over in a tub of such liquor.

BORAGE (*A Darlington Subscriber*).—You may obtain the seed of any London seedsman. Sow in March, April, and July, for a succession. It is an excellent bee-flower. It requires an open situation and dry soil, but might do under fruit trees not crowded. *Melilotus leucantha*, is a good bee-flower. You will require a larger surface of flowers to render a harvest of honey equal to that your bees obtain from the moors.

SOWING MISTLETOE SEED (*A. S.*).—Make an incision through the bark, and down to the wood, on the under-side of the branches of any Apple tree. Make the incision in the shape of the letter V. Raise from the wood the

point of the bark so cut, and insert beneath it one or two seeds freshly squeezed from a Mistletoe berry, and press the bark tongue down on them. The best time for this sowing is during February. The seed will not grow in soil. It is a parasite.

ILLUSTRATED GARDEN BOOK OF PLANTS (*R. Kerfoot*).—There is no such work.

SAVING GRAPES FROM WASPS AND FLIES (*J. L.*).—If you cannot exclude the marauders by a gauze curtain, placed over the open windows and ventilators, cut the bunches, and hang them up in a dry, warm, dark closet. We have so kept them for months, and they have improved in sweetness, though not in appearance. The few mouldy berries which will occur must be removed as soon as seen.

GROWING HYACINTHS AND TULIPS IN BEDS (*A Country Subscriber*).—For Hyacinths in beds, out of doors, four inches from the crown of the bulbs is the best way under all circumstances; but, under your plan of having annuals sown on the beds, four inches deep to the top, or crown, of the bulb, is indispensable, because you must not put any kind of mulching over seeds. But your system is wrong. Your annuals ought to be sown on a poorer soil, and transplanted in between the bulbs next March, or April, according to the weather. For early Tulips, such as yours, three inches deep is the best covering, as Tulips are as different in their nature from Hyacinths, as crocodiles are from eagles. The old bulb of a Tulip, or all Tulip buds you planted this autumn, you will never see again: they will die next spring, like "seed" Potatoes, whether you cut the flower-stems or not. It is not the flower, but the seed pod on the top of it which must be cut off, in order that the strength of the roots may not be wasted in nourishing seeds, instead of feeding the bulbs. Tying bed Tulips, or Hyacinths, to flower stakes, ought to be needless. If the "roots" are not able to hold up the bloom, as at the Crystal Palace, they are not so strong as they ought to be.

NAMES OF FRUITS (*R. D.*).—No. 1, *Beurré Bosc*; 2, *Fondante d'Automne*; 3, *Vicar of Winkfield*; 4, *Flemish Beauty*; 5, *Gloot Moreau*; 6, *Urbaniste*; 7 and 8, *Monarch*; 9, *Ne Plus Meuris*; 10, *Passe Colmar*; 11, *Winter Nelis*; 11, *Van Mons Léon le Clerc*; 12, *Winter Nelis*. Others not known. (*C. P. C.*).—Certainly not the *Golden Pippin*. It is the *Golden Knob*.

NAMES OF PLANTS (*A Constant Reader*).—Your plants are as follows:—No. 1, *Catalpa syringaefolia*; 2, *Cupressus torulosa*; 3, *Gynernum argenteum*, the Pampas Grass.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

OCTOBER 13th and 14th. CREWE. Sec., D. Margetts, Crewe. Entries close 30th September.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, 57, Woolworths, Halifax. Entries close the 20th of November.

JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs., R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

N.B.—Secretaries will oblige us by sending early copies of their lists.

PARTRIDGE SHOOTING.

(Continued from page 15.)

How did I feel? My readers may conceive, but I cannot describe it. I was furious that my dog had so misconducted himself,—I was disappointed that the place where birds abounded should be so effectually cleared,—and was only saved from an attack of violent ill-temper by a cheerful laugh from my brother-in-law, as he jokingly congratulated me on the possession of such an energetic dog. I tried to laugh also, and remarked that, "At all events, the birds were now well scattered." "Yes," said my brother-in-law, "but they are driven out of our manor. This field is the boundary, and I wanted to keep them before us." "Do you think," said I, "we gave Tippoo the advantage of the wind?" The only answer was another laugh, and we agreed to take him up. He was standing, breathless, at a small distance from us, and all tried to coax him to our feet. I had concealed my whip in my sleeve, and, having learned that the way to flog a dog, so that he cannot turn upon you, is to take him by the hind leg, and hold him up by it with one hand and lay on with the other, I had made up my mind to show I was not the novice they were pleased to consider me,—but he would not be caught. As my brother-in-law remarked that it would be useless to endeavour to get any shooting while he was at liberty, we all did our best to entice him. But he would not be caught; and we were just in the position given in the illustration of "Oliver Twist," when Mr. William Sykes wishes to catch his dog, and drown it, and when, for that purpose, that estimable character coaxingly holds out one hand, while the other conceals a rope behind his back. So we

three, with extended hands, and honed accents, courted Tippoo, who stood about ten yards from us, with ears thrown back, tail between his legs, and showing magnificent white teeth. What was to be done, if he would not come to us?—the next best thing was to drive him away. Still, I had a lingering desire to try him again. Was he not my dog? And I own to a little feeling of irritation, when my brother-in-law told his man to throw a stone at him. However, I said nothing. Many were thrown at him, and, at last, one hit him: he uttered a short cry of pain, and removed just out of reach of our missiles. Clever dog, and very fond of shooting, thought I.

We left the scene of my vexation, and, following a lane, took to another part of the manor. I looked round, from time to time, and Tippoo was not visible. Lost, thought I; and, had I been alone, I think I could have remedied his faults. We tried a small piece of clover. I walked into a covey; they rose in front of me, all of a heap; I shot both barrels, and killed nothing. My partner killed two. Another covey rose. Again I missed, and another, with the same result. I was getting on bad terms with myself.

Drat the dog! he was the cause of it all. "Never mind," said my brother-in-law, "they are all now in the large Swede field, and you may shoot till your gun is red hot." A single bird rose; I killed him,—a capital shot. My spirits rose, and I felt sure I could now shoot. I had recovered myself. I was rejoiced to hear my partner say, as we entered the Swedes, that he would warrant there were a dozen coveys of birds in it. I made up my mind to be very cool, to aim well in front of my birds, and, above all, to select one when a covey rose. I soon had the trial. I killed, a double shot. "Capital," said my brother-in-law. "Mark," shouted his man, "Mark, Mark, Mark, what is the matter? What makes the birds so wild? There they go, covey after covey. What on earth is it?" For a moment I was astonished, then a feeling grew upon me, that in some spot where the Swedes were not so high, I should see my faithful dog. Too true, not far from us was a space where the plant had failed, and he passed it like lightning, still in pursuit.

Regular shooting was out of the question, unless we began by shooting *my dog*. We, therefore, made out the day as we could. I missed every other shot I had, and towards evening reached home, vexed and tired.

It is a very natural feeling in a young wife, to desire that her husband should appear in the most favourable light to her family, especially on her first visit after marriage, to that which was her home,—that he should, by his demeanour, cause every member of it to approve the choice she made, when she took him for better and for worse. Now, my temper had been sorely tried all day, but I had continually gulped it down when it was rising. I was, also, disappointed and tired. I am afraid wives do not always get fair play. They have, in the conjugal *tête-à-tête*, to bear the brunt of many an annoyance they have had no share in causing; and the absence of a button on a shirt will cause the explosion of the pent up ill-humour of a bad day's sport, a trying day in the city, or a tiresome day's business. As I expected, mine had everything ready for me,—dry clothes were at the fire, my slippers were in their place, and a cheerful, smiling face welcomed me. But the first question was an unfortunate one,—"Well, how have you shot? How many birds have you killed? Where is Tippoo?" My brother-in-law burst into laughter, and, with a gesture of impatience, I passed my wife, and went to my room.

Admiring the motto of the great Napoleon, "*Qu'on doit toujours laver son linge sale en famille*," I shall not relate what passed between us. It would not be to my credit, and I confess I was very ill-tempered.

However, we came down to dinner, and I recovered my serenity; but I was unaccustomed to hard walking, I was very tired, and soon after I had finished eating I fell asleep. I was cross when my wife attempted to wake me,—an unlucky joke of my brother-in-law about my dog finished me,—and the first day's shooting, to which I had looked forward so long, ended in my going to bed by myself very early, in a very bad temper, having succeeded in causing all the family to pity their relative who was married to me.

POULTRY SHOW AT TOWCESTER.

Most people know the difference between the stately public dinner,—its forms, ceremonies, singers, and list of toasts; or even the conventional large dinner in a private family, where half the company is strange to the other half, and the social meeting of a

few old friends, to discuss the best haunch of venison of the season, or a saddle of one of the five-year-old Downs, that have made their mouths water, when they saw them half hidden in grass as they rode to the hall to make a morning call. There is just the same difference between the large poultry show and the peripatetic exhibition that follows the agricultural meeting, wherever it goes. The magnitude of the first, in both instances, has to be forgotten, and then all is familiar; but in the other no introduction is necessary,—everybody is at home. We like to attend these meetings. Held in the open air, for purely agricultural purposes, the combination of animals, poultry, roots, and implements, seems a happy one, fitted to carry out the object for which it is intended. It is also a wise plan to visit each part of the county in its turn; we speak only of poultry, but we know that makes converts and gains admirers at every fresh locality. It is strange that the class which can keep it most easily, and at the smallest cost, should be the last to take it up seriously. If the list of exhibitors were classified, it would be seen the largest number belongs to professional men, and those engaged in trade. Many of our most successful exhibitors at large Shows are men who are resident in towns, and who labour under every disadvantage. Every improvement is, however, a work of time, and this is making its way. If proof were wanted, we would adduce this Show, held at Towcester. It was more numerous than any of its predecessors,—the birds were of better quality, and almost all belonged to agriculturists. We hope we are not going beyond our duty, or getting out of our depth, when we say one word of the Show generally. It was in every respect a good one. Cattle, horses, sheep, pigs, and implements, all contributed their share, and a good one. Add to this a Horticultural Show, where connoisseurs said the Dahlias were matchless; and even those who care not for such things stood amazed before "wee" little fruit trees,—Apples, Pears, and Peaches, growing in pots, and groaning under the weight of their fruit,—not little blights, like the Oranges and Lemons we sometimes see, but good, ripe, luscious fruit, that seem to say, "I am in perfection, come and eat me;" and the Heaths and Ferns, and the most beautiful miniature greenhouses in actual work, and full of plants in flower. We must notice one which had a tank in the centre, and vigorous plants living in it. The largest of these little greenhouses was only about four feet in length by thirty inches high. Add to this the band of the 2nd Life Guards, and we shall be believed when we say, the Agricultural and Horticultural Meeting at Towcester will be long remembered by the good people of the town. To our mind, however, these were accessories; the poultry was our business.

We begin with *Dorkings*, for which there were three classes,—adults, chickens, and cock and pullet. We have before stated our opinion, and now repeat it, that the soil of this county must be favourable to the breed, for we never see better chickens anywhere: they are a large kind, and, above all, healthy. Those shown here would have been a credit to any exhibition. Need we say the Rev. F. Thursby was first in the two first classes. This gentleman's name has long been associated with excellence in this breed; but he has distributed it far and wide, and he has difficulty at times in beating his own stock. Thus he was beaten by Mr. Wood, in the third class. Mr. Shaw was second with a capital pen of adults; and Mr. Brown took second for chickens, with some birds hatched from eggs bought of Capt. Hornby. Mr. Wood, who took first for birds of 1858, showed an unusually good pen, having one of the best cocks we have seen this year.

The *Spanish* were very good. Mr. Shaw took first for adults; but he was obliged to be content with second for chickens, being beaten by Mr. Thursby.

We cannot speak in the same terms of praise of the *Cochins*,—they were not well matched. Cinnamon hens were put with Buff cocks, and vice versa. Crooked combs were also plentiful among them.

There were good *Game* fowls shown; but, with the exception of Mr. Payne's first and Mr. Beasley's second prize birds, these were all villainously dubbed; a large ridge of comb standing, and destroying the intelligent and snake-like head, so much admired.

Mr. Marriott was the Archer of the day, and carried all the Pencilled *Hamburg* prizes. He did the same in the Spangled. If we were asked to name the best of his four prize pens, we would choose his Silver-pencilled chickens.

Mr. Thursby took first, in the *Various Class*, with Sebright Bantams; and Mr. Franklin second, with excellent *Andalusians*.

The next class and its successor were deserving of high commendation,—we allude to the *Ducks*. *Aylesburys*, as is the

custom, had the precedence. Mr. Harrison, of Clipstow, was first; and Mr. Manning, of Towcester, was second. They were excellent birds. In a pen of Buenos Ayrean, Mr. Beasley showed the best-shaped and smallest Duck we have seen for a long time; and Mr. Sheffield well deserved his second prize for Rouens.

The Turkeys were very good. Mr. Twitchell took first with adults; but all the others were distanced by Mr. Jones' poult.—they were admirable.

Mr. Baily was the Judge.

GRAND BIRD SHOW AT THE CRYSTAL PALACE, SYDENHAM.

GREAT preparations are being made, to give fitting *éclat* to the forthcoming Show of Canaries and other choice British and Foreign Birds in November. The Directors of the Crystal Palace are resolved, that the lovers of natural history, and the keepers of birds in cages, shall have an unexampled treat. This has induced them to throw open the Show to unlimited competition, which will, of necessity, bring together, not only an immense number and a vast variety of beautiful living specimens, but will gratify a taste for natural pursuits, which, we rejoice to see, is greatly on the increase. No exhibition on so grand a scale has ever before been attempted. The public will be pleased to hear, that the tropical department of the Crystal Palace has been set aside for the purpose. Here the birds, and other tame animals, will be brought under one view; and Mr. William Kidd, whose services have been secured for the occasion, will daily deliver an interesting and familiar lecture on the Philosophy of Bird-Keeping, Bird-Breeding, Bird-Taming, &c.

The advantages of an exhibition like this cannot be too much dwelt upon. Fathers, mothers, teachers, students, children,—all are alike interested in it. As for the exhibitors, they hardly need to be told that, the Show being under the authority of the Directors, the most perfect good faith will be kept with every individual. When we add, that the management of the whole has been entrusted to Mr. William Houghton, the gentleman who has so ably conducted the various poultry shows at the Crystal Palace, nothing remains to be said in praise of this National Exhibition of Choice Birds. The entries close on the 23d of this month.

WORCESTER POULTRY SHOW.

THIS was held October 7th and 8th. The following is a list of the awards:—

SPANISH.—First, J. K. Fowler, Prebendal Farm, Aylesbury. Second, J. R. Rodbard, Aldwick Court, Langford, Bristol. Third, J. Clews, Wallhouse Street, Walsall. Highly Commended, J. R. Rodbard. Commended, Hon. W. W. Vernon, Wolseley Hall, Rugeley, Staffordshire; G. Fell, Springfield, Warrington; W. Moore, Hanley Castle.

DORKINGS (Coloured, except Silver Grey).—First, C. H. Wakefield, Malvern Wells. Second, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Third, Mrs. Seamons, Hartwell, Aylesbury. Highly Commended, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescot.

DORKINGS (Silver Grey).—First, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Second, H. W. B. Berwick, Helmsley, York.

DORKINGS (White).—First, Rev. G. F. Hodson, North Petherton. Second, Capt. Beardmore, Uplands, Fareham, Hants.

GAME (Black-breasted and other Reds).—First, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Second, G. W. Moss, The Beach, Liverpool. Highly Commended, H. Horton, Sansome Walk, Worcester; E. H. France, Ham Hill, Powick; G. W. Moss.

GAME (Duckwings and other Greys and Blues).—First, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Second, J. J. Fox, Devizes, Wiltshire.

GAME (any other variety).—First and Second, Hon. W. Vernon, Wolseley Hall, Rugeley.

COCHIN-CHINA (Cinnamon and Buff).—First, H. Tomlinson, Balsall Heath Road, Birmingham. Second, G. Fell, Springfield, Warrington. Highly Commended, T. Stretch, Marsh Lane, Bootle, Liverpool; Miss V. W. Musgrave, West Bank, Aughton, Liverpool. Commended, H. James, Walsall.

COCHIN-CHINA (Partridge and Grouse).—First, T. Stretch, Liverpool. Second, J. K. Fowler, Prebendal Farm, Aylesbury. Highly Commended, Miss V. W. Musgrave, Liverpool; H. Tomlinson, Birmingham. Commended, H. Churchill, Gloucester.

COCHIN-CHINA (any other variety).—First, A. Peters, The Priory, Fratton, Portsmouth. Second, H. Loe, Winchester.

BRAHMA POOTRA.—First, J. K. Fowler, Aylesbury. Second, Mrs. Pullen, Hallow. Highly Commended, G. M. Lake, Walthamstow, Essex.

HAMBURGS (Gold-pencilled).—First, E. L. Williams, Northwich, Cheshire. Second, W. Pierce, Hartford, Northwich. Highly Commended, J. Martin, Claines, Worcester.

HAMBURGS (Silver-pencilled).—First and Second, E. Archer, Malvern. Highly Commended, G. Griffiths, Worcester; E. Archer; W. Pierce, Hartford. Commended, Master W. Griffiths, Worcester.

HAMBURGS (Gold-spangled).—First and Second, W. R. Lane, Birmingham. Highly Commended, Messrs. Haigh & Hartley, Lip Hill Bank, Holmforth.

HAMBURGS (Silver-spangled).—First, Mrs. Petat, Ashe, near Basing-

stoke. Second, E. Archer, Malvern. Commended, Messrs. Bird & Beldon, Eccleshill Moor, Bradford.

POLANDS (Golden).—First and Second, Mrs. Petat, Ashe, near Basing-stoke. Commended, G. S. Fox, Wellington, Somerset.

POLANDS (Silver).—First, W. Dawson, Selly Oak, near Birmingham. Second, J. Dixon, Bradford. Highly Commended, Mrs. Petat, Ashe, near Basingstoke; Col. Clowes, Crowle.

POLANDS (Black, with White Crests).—First, J. Dixon, Bradford. Second, Col. Clowes, Crowle. Highly Commended, Col. Clowes; G. Ray, Minehead, Lyndhurst. Commended, A. E. Smith, Portsmouth.

ANY DISTINCT VARIETY (not included in the above classes).—First, J. J. Fox, Devizes (Malay). Second, Hon. W. W. Vernon (Silk Negro).

BANTAMS (Gold and Silver-laced).—First, Rev. G. F. Hodson, North Petherton. Second, T. H. D. Bayley, Biggleswade, Beds.

BANTAMS (Black or White).—First, Colonel Clowes, Crowle. Second, Hon. W. W. Vernon.

BANTAMS (Game).—First, T. H. D. Bayley. Second, J. Thornton, Heckmondwike, near Leeds. Highly Commended, Hon. W. W. Vernon.

TURKEY POULTS.—First, Miss L. Crawshay, Caversham Park, Reading. Second, J. K. Fowler, Aylesbury. Highly Commended, Mrs. E. F. Blair, Balthaynock, Perthshire.

GOSLINGS.—First, J. K. Fowler, Aylesbury. Second, Mrs. E. F. Blair, Balthaynock, Perthshire. Highly Commended, S. Rigby, Ashby, near Welford. Commended, S. Rigby.

DUCKLINGS (Aylesbury).—First, J. K. Fowler, Aylesbury. Second, J. Weston, Oxford Road, Aylesbury. Highly Commended, Mrs. Seamons, Hartwell, Aylesbury. Commended, Mrs. Seamons.

DUCKLINGS (Rouen).—First, J. K. Fowler, Aylesbury. Second, J. K. Bartram, Bath. Highly Commended, T. Keable, Devizes; J. K. Fowler. Commended, T. Keable.

DUCKLINGS (any other variety).—First, H. Churchill, Gloucester. Second, J. Dixon, Bradford. Highly Commended, E. H. France, Powick. Commended, J. K. Fowler, Aylesbury.

SWEEPSTAKE.—*Game Cock Class.*—First, H. Horton, Sansome Walk, Worcester. Second, E. Archer, Malvern. Third, G. W. Moss, Liverpool. *Dorking Cock Class.*—First, Capt. W. Hornby, R.N., Prescot. Second, H. W. B. Berwick, York. Third, C. H. Wakefield, Malvern Wells.

TUMOUR IN A RABBIT.

I HAVE been obliged to kill a fine doe rabbit, half-bred lop. She has been for some time getting thin, and more so since her last family has been removed. A very hard swelling, nearly as large as the rabbit's head, came under the jaw, extending down the neck, towards the dewlap. This remained so very hard, that at last I had a small incision made, and found it full of hard matter. At length, however, without any abatement of hardness, it seemed to have broken into the mouth. The poor thing seemed to be suffering, and, although I had special reasons for wishing to keep her, yet I saw no alternative but that of putting her at once out of her pain.

I have seen many books on rabbits, and their treatment and diseases, and all that you have said in your publication; but I have never met with any description of such a case. I should be glad to know whether it is a regular disease to which rabbits are liable, or whether it is a special case? If so, can you account for it? I keep many rabbits, and may say that I have no deaths, even among the young ones, so that error in treatment would not appear to be the cause. My rabbits are kept in large hutches, five feet by three feet, and three feet high, in a comfortable shed, and always seem to enjoy excellent health. I feed them, when I have plenty, with green food from the garden, Oats, and Clover hay; but, when greens are scarce, I keep them principally on Malt-dust, mixed with about a fourth part of Barley-meal, and damped with water. On this, not only the old ones, but the young stock seem to thrive and grow fat; and they will, when used to it, even leave green food for it. In the winter, besides this, I give Swedes, and at all seasons Clover hay, which they much enjoy.—M. S. Y.

OUR LETTER BOX.

DISEASED TURKEYS (A Constant Subscriber).—They have the roup. Wash their heads twice daily with warm water. Give each daily two grains of sulphate of copper, mixed thoroughly with oatmeal and ale into a soft mash. Let them have plenty of green food. Separate each fowl affected from its companions. If not better in ten days, kill it.

LONDON MARKETS.—OCTOBER 11TH.

POULTRY.

The supply of poultry has been small during the past week, and prices have, in some instances, improved:—

	Each.	Each.	
Large Fowls	4s. 0d. to 4s. 6d.	Hares	2s. 6d. to 3s. 0d.
Small ditto.....	3 0 " 3 9	Partridges	0 4 " 0 9
Chickens.....	2 3 " 2 9	Grouse.....	2 3 " 2 9
Geese	6 0 " 6 6	Pigeons	0 8 " 0 9
Ducks	2 6 " 2 9	Rabbits	1 3 " 1 4
Pheasants	2 6 " 3 0	Wild ditto.....	0 8 " 0 9

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	OCTOBER 19—25, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
19	TU	Echeveria grandiflora.	29.761—29.529	64—39	E.	.03	32 af 6	58 af 4	23 af 2	12	14 56	292
20	W	Erica pulchella.	29.818—29.796	63—51	N.E.	—	34 6	56 4	40 3	13	15 6	293
21	TH	Erica cerenthoides.	29.743—29.647	56—41	N.	.30	36 6	54 4	59 4	14	15 16	294
22	F	Erica acuminata.	29.687—29.603	51—42	N.W.	1.90	38 6	52 4	rises	15	25	295
23	S	Erica aurea.	30.081—29.852	63—38	S.W.	—	39 6	50 4	45 4	16	15 34	296
24	SUN	21 SUNDAY AFTER TRINITY.	30.050—30.045	62—38	E.	—	41 6	48 4	12 5	17	15 42	297
25	M	Erica exsurgens carnea.	30.891—29.790	60—37	N.E.	—	43 6	46 4	52 5	18	15 49	298

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 57.9° and 40.5°, respectively. The greatest heat, 72°, occurred on the 21st, in 1826; and the lowest cold, 20°, on the 21st, in 1842. During the period 111 days were fine, and on 106 rain fell.

GARDENING OPERATIONS FOR THE WEEK.
KITCHEN GARDEN.

ARTICHOKE.—Cut down the old flowerstalks, remove some of the large outside leaves, and cover the roots.

BEET.—Take up the roots carefully, and preserve them in sand. If the roots are broken, or cut, they bleed much. The leaves to be cut off at least an inch above the solid part of the root.

BROCCOLI.—The *Cape* varieties, that are now heading, to be secured from frost.

LETTUCE.—Give air at every favourable opportunity to the young plants; the *Cabbage* and other varieties, intended for winter use, will not need it so freely.

MUSHROOMS.—The bed, made as advised last week, will be fit to spawn when the heat has decreased to a very mild and moderate degree; for the heat should be only sufficient to excite the spawn to extend its fibres into the dung and earth, and to continue some time in a moderately-growing warmth, that it may increase and promote, in a spreading manner, the production of an abundant crop. Some beds, after being made, will require a fortnight or three weeks before the heat is sufficiently abated to be in a fit state to spawn. When the temperature has sufficiently declined,—viz., to 45° or 50°,—put in the spawn, previously breaking the large lumps, or cakes, into eight or ten moderately small pieces, planting them into both sides and ends just within the surface, and knocking each firmly in its place with the hand. To be earthed-up, from two to three inches thick, with the hand, and well pressed, smoothing it a little with the back of a spade, then covering with dry straw, from eight inches to a foot thick.

PARSNIPS.—They keep best when left in the ground.

RHUBARB and SEA-KALE.—Clear away the decayed leaves, and cover the roots with any short litter, or old tan.

SCORZONERA and SALSAFY.—Take up the roots with care, and preserve them in sand.

FRUIT GARDEN.

CHERRIES and PLUMS.—Plant, as their leaves have generally fallen, in consequence of the late frequent occurrence of frosty nights.

CURRENTS and GOOSEBERRIES.—Make fresh plantations where required, and propagate by cuttings.

FRUIT TREES.—When planting, spread the roots out carefully, and work the soil between them with the hand; never shake the tree up and down, as it disarranges the roots; for when drawn up they seldom or never return to their former position, but are more likely to bend when pressed down. Root-prune where the trees are growing very luxuriantly, or take them entirely up, and replant them.

FRUIT ROOM.—Gather all remaining Pears and Apples forthwith, if unripe; also Quinces, Medlars, Walnuts, &c.; they will receive no benefit out of doors after this period. Allow a free circulation of air.

FLOWER GARDEN.

After the fine rains we have lately had, it is advisable No. 525. VOL. XXI.

to proceed diligently with all alterations in the pleasure ground and flower garden, as there is a nice genial warmth in the ground to excite the roots of trees and shrubs, when planted now, to establish themselves before the severity of winter sets in. After the removal of summer-flowering plants, or where the frost has seriously damaged or destroyed them, a fresh and cheerful appearance may be given to the flower-beds by introducing a supply of small, neat plants of the hardy evergreen shrubs,—viz., *Aucubas*, *Arbor Vitæ*, *Berberis*, *Euonymus*, *Hollies*, *Laurels*, *Laurestinuses*, *Pinuses*, *Rhododendrons*, &c. By disposing the various tints of dark, light green, and variegated foliage, in separate or mixed beds, with an eye to the different modifications of conical and globular-formed heads, a very pleasing variety would be produced when seen from the window, even in winter.

AURICULAS, CARNATIONS, &c., kept in pots, in cold frames, to be carefully watered. The soil should neither be allowed to get thoroughly dry nor too wet; a medium state of moisture is that which should be aimed at during the winter.

BULBS.—Plant of every description, intended for beds or borders, before the ground becomes saturated with wet.

PANSIES, POLYANTHUSES, in frames, or in the open ground, to be carefully watched, against the depredations of slugs, which soon, if neglected, work great havoc.

ROUTINE.—Protect all plants that will not stand the severity of the winter. Keep the lawn neatly mown at this season, to ensure a close green carpet next summer. Sweep gravel-walks frequently, to prevent leaves from staining the gravel.

TULIPS.—The best beds to be prepared, if not done as advised a fortnight ago, and dug twelve or fifteen inches deep; to be raised with a curvature six inches above the alleys; the bulbs to be planted in drills, across the beds, six inches apart, and covered two inches deep with light sandy loam. Replace a portion of the old soil with well-decomposed turf and sandy loam, if *Tulips* had been planted in the same beds last year. WILLIAM KEANE.

STUD HOUSE—PRUNING YOUNG FRUIT TREES—PACKING FRUIT.

To go on a gardening visit to Hampton Court, and not see the Stud House, now in the occupation of the Marquis of Breadalbane, would be like going to London to see the sights and missing Westminster Abbey.

Although the Marquis has not been there this summer, the place has been kept, all along, just as if the family were at home in the Stud House, which care is the best policy in such cases. Many are of opinion that it is a saving to let their gardens get behind when they are not there themselves; but, unless the neglect is done in a proper way, and for a period of more than one year, depend upon it, the attempt thus to save is a piece of extravagance, for which somebody must pay. The whole of a kitchen garden might be laid down in grass up to the walls, and no harm be done, but the contrary. If wall

fruit trees, however, are neglected for one year, it may take years to get them on the right track again. Flower-beds may be grassed over for a time; but nothing about a place suffers so much as the lawn, if it is not regularly mowed. Therefore, to reduce the labour of a garden for one season is certainly not economy, if economy means good management, as Cobbett used to say.

The Marquis of Breadalbane is well aware of all that, and Mr. Kidd, his head manager here, is of the same opinion, and the place is kept up as it should be. The crops of fruit and vegetables here this season were enormous. We have had the benefit of Mr. Kidd's system of managing young trees in general, and I shall only allude more particularly to his wall and stone fruit trees.

The true theory of managing fruit trees, till they are of age to bear fruit, is not to be found in any book on fruit trees in the English language. The nursery management of fruit trees, and more especially of stone fruit trees and all trained trees, is on a wrong principle, because it is the only system that will pay. If people must have trees so and so, then there is no room for such and such trees. But the true and best way of dealing with such trees was detailed from practice, in Loudon's *Gardener's Magazine*, more than thirty years back, and it is now practised by a large number of our best gardeners, amongst whom Mr. Kidd is one of its greatest advocates.

Their system, which I myself have adopted, for more than twenty years, is this:—From the day you bud a Peach, or graft an Apple, a knife must not touch the tree till the first winter after it has borne fruit. "Keep the knife from them till they begin to bear" is the motto,—all the pruning they need should be done with the finger and thumb. But is there not something left out when they say, touch it not with the knife after it is budded or grafted? Is the stock allowed to grow with the graft or bud? Surely not. Well, can you cut off the head of the stock, or snag it back behind the bud with the finger and thumb? No, not very likely; but all that is understood. Here is exactly the point where we great gardeners are as wrong as those who cut and come again to the fruit quarters. We know all the little necessaries, and they are "understood" amongst ourselves; but we do wrong in supposing that they are generally understood, as must be the case, when we say, "touch not the tree with the knife till after it has borne fruit." When the stock is part of the tree, and the head of it, it must be cut after the bud has taken; but after that, touch not till after fruit comes.

The way is this. The bud of a budded Peach, Nectarine, Apricot, Plum, or Cherry, starts, or begins to grow, in May. If the plant is to be a standard from a low bud, or budding, all the side-shoots it will make the first year must be stopped at the first joint,—that is, just beyond the first joint; and, if that joint starts, stop it after the same system to the end of the season, and also to the length of the stem of the standard afterwards, if the growth does not make standard height the first season.

The next is to be a low, bushy tree, the shoots beginning near the ground. These are called dwarfs in the trade, and dwarfs should have five stems to begin with,—or three stems, if five cannot be got,—the first year. When the graft, or bud, has grown ten inches long, or a few inches more or less, according to some kinds, the top bud is broken off, and that compels all the eyes to break, or push into shoots immediately,—that time of stopping the leading bud being the height of the growing season. If there are more than five starts, or shoots, they must be reduced to that number, by displacing the other young shoots in such a way as will leave the five as nearly in a circle as possible. The foundation of dwarfs is thus laid, without a cut, by Midsummer of the first year. The five shoots are sure and certain not to be exactly of the same strength; and, when the strongest of

them reaches two feet from the bottom, it must be stopped,—say, early in August; and from this stop three shoots ought to be had; then there would be eight shoots; but five shoots would be better the first year. Therefore, two out of the three starts should be stopped, a few buds from the start. If two of the five shoots are much stronger than the rest, stop two instead of one. At the end of the first growing-season a dwarf is complete in itself, and ready to be planted, or transplanted, for good. It has five vigorous shoots nearly of the same strength; and, if it is not sold, the five shoots must be cut back, to keep the tree within bounds in the nursery. But, if it is sold, the five shoots must not, or should not, be cut back on any account whatever; they should only have from six inches to ten inches of the points cut off; and, if more than two shoots start from the cut ends, they are to be stopped when they are a few inches long. But two shoots are to be allowed to grow their full length, to make ten principal limbs to the dwarf tree.

When the tree is to be a trained one, the top bud is also to be stopped when it is ten inches long; and five of the best shoots from the break, or next growth, are to be selected for their best positions for making a regular fan-like shape; and, if any of these five shoots is stronger than the rest, it is trained lower down than its right position, in order to check it, instead of stopping it, as for dwarf, bush-like trees. Then, by the end of the first growing season, a maiden Peach, Nectarine, or Apricot, has a framework of five principal shoots; and none of them are to be cut more than six or nine inches back; and seven or nine shoots are to be the complement the second year.

This natural system does away altogether with the most objectionable practice of cutting back maiden trees at the end of the first growing season. The stock on which the tree is worked does not get stunted, or bark-bound, as it does, in nine cases out of ten, from the sudden check of cutting off the whole head to a few inches. There are no large wounds to heal over, and to leave a dead surface, under the new wood, to canker, to gum, and ultimately to extend its baneful influence to the destruction of whole limbs. Such is the system which Mr. Kidd approves of and practises; and, if success depends on the weight of crops, and on the health and medium-size of the wood, no one has more reason to be satisfied than he and his employers.

This plan of growing Tomatoes on the open border has extended far and wide round London, and reduced their value in our home market just one half. At first the market-gardeners of London would not believe my report, and some of the best of the gardeners came down to my house to see that it was all right. Mr. Forsyth, from Gunnersbury Park, is the best known of those who made sure of the point; and Mr. Watson, market-gardener, of Ealing, came over last May, and took away lots of the seedlings from Mr. Kidd, probably because he believed the kind was more hardy than his own. He did not tell us how they turned out; but he spoke of planting an acre or so of them for Covent Garden. But this season Mr. Kidd had all his Tomatoes out in the quarters of the kitchen garden, and he ripened loads of them. I never saw such a sight, or believed the thing possible; but they sent me a large basketful of the very finest ripe Tomatoes from the wall border of the Experimental Garden. The border had an eastern aspect, and the plants were not near the wall. The way Mr. Kidd had them was on ridges, sloped to the south, at an angle of 45°. Three such ridges were as long as his wall border of 400 feet. He takes a crop of winter Lettuce, and another crop of early Potatoes, from the same ridges, before planting the Tomatoes; and he can send full-ripe Tomatoes to Teignmouth Castle, the Highland residence of the Marquis of Breadalbane, 500 miles carriage, without losing a "fruit;" and, of course, he must be a first-rate fruit-packer, and so he ought, for he has had more than twenty years' practice of packing all the best kinds of fruit for long distances.

He can also make the Shrubland Park style of nosegays, and pack them so as to go fresh to any part of the three kingdoms; and I could mention a lady who has a fresh nosegay every morning, to come down to breakfast with, from her own garden, no matter what the distance may be. The rise or fall of a Cabinet, or the flight of a comet, is nothing to such people, in comparison with the marked style of their nosegays; therefore, all young gardeners should learn the art and mystery of making them. Some of the most practised hands at this art will be surprised, when they hear that Mr. Kidd makes all his nosegays with one single tie, any size, from six to eighteen inches across, and as flat as the crown of my hat, all in rings of "simultaneous contrasts," as the great French dyer, Chevreul, has it.

Mr. Kidd, like Mr. Donald, his next-door neighbour at Hampton Court, wonders how any one accustomed to flowers could think they could be arranged effectually in flower gardens according to Chevreul's diagrams; but he thinks some of the examples of Chevreul are excellent studies for the bouquet-makers; and so do I. I have read every word of that book since my last communication, and I find that Chevreul was not wrong at all about flower gardens. "Our people" were wrong in putting the blame on his shoulders, laying the weight of their own want of knowledge of colour to the account of the most distinguished colourist in Europe, who even warns them against doing so in this remarkable passage:—"In the preceding remarks the colours, including white, black, and grey, are supposed to occupy an equal extent of surface, and to be placed at equal distances apart; for, without these conditions, the results will be different. The ground (colour), as well as the interval between the colours, having influence upon their effect, all my observations were made with white, black, and grey." As ground colours, then, it follows that, until our flowers can be placed on white grass, black or grey grass, or gravel, and with no green leaves to them, we must not expect the same "results." A blanket of *Tom Thumb*, another blanket of *Calceolaria rugosa*, and a blue blanket of *Lobelia*, on a white pavement, would give the three primitive colours of painters, if the three blankets were of the same size and three feet apart each way. Verily, it is humiliating to our pride of far-sightedness to think that any of us with half an eye, and the other right out, could not see the total absurdity of applying Chevreul's rules to the planting of flower gardens. But the blind have been leading the blind to their mutual satisfaction for years, and why should we disturb their feelings? They will come round, like Dr. Lindley, when they see the light.

"METHOD OF PACKING FRUITS, OF ALL KINDS, FOR LONG DISTANCES.

"I may here state, that I have found no better method in all my experience, which has extended over a period of twenty years, with all kinds of fruits, varying in distance from fifty to five hundred miles. It simply is—box, soft paper, and sweet bran. A box is chosen, in size, according to the quantity to be sent. A layer of bran is put at the bottom; then each bunch of Grapes is held by the hand over the centre of a sheet of paper; the four corners of the paper are brought up to the stalk, and nicely secured; then laid on its side in the box, and so on, until the first layer is finished. Then fill the whole over with bran, and give the box a gentle shake as you proceed. Begin the second layer as the first, and so on, until the box is completed. Thus, with neat hands, the bloom is preserved, and may be sent to any distance; but, with clumsy hands, quite the contrary, and often an entire failure, as the putting in and the taking out of the box are the most important points to be observed. I have, invariably, packed sixty or eighty bunches of Grapes, and fifty or sixty dozens of Peaches or Apricots in one box, and received letters from employers, to say that they have arrived as safe as if they had been taken from the trees that morning."

I asked Mr. Kidd to give a concise description of his plan for packing our finest fruits for long distances, and there it is in his own words.

D. BEATON.

THE BEST MODE OF TREATING SOILS IN OLD GARDENS.

EVERYBODY knows that old gardens are not similar in their produce to new ones. This is a strange affair, but not more strange than true. If any person, perfectly unknowing in the mysteries of gardening, yet of most philosophic character, were to be asked his opinion as to what the effect would be of manuring a plot of ground annually for a century, his answer would probably be, that the soil would accumulate a vast amount of manurial matters, and would produce vegetables over coarse and unproductive, in the true sense of the word. But, behold a Cabbage plot in many such gardens, devoured, or rather paralysed, by the club! Apply what amount of mere manure you please, where the tendency exists, and it is of no avail: there is evidently too much, or too little, of something. Atmospheric influences are of no consideration here; for two plots, enjoying the same conditions of atmosphere to a fraction, may grow side by side,—the one a prey to the club, the other all perfection. But dig up a portion of an old field, which has lain dormant for a score of years; manure it well; and 'tis odds but you have first-rate Cabbages, or at least free from club. And the same with many other vegetables. In old soils, the Parsley cankers, the Lettuces shank, the Turnips are fingers and toes, the Strawberries run to leaf too much, the Peas are all straw, and the Onions all necks, besides a host of other evils, which newly broken-up soil by no means emulates.

These old soils are full of what is called humus,—the débris, shall we say, of many a load of manure: to this the newly broken-up soils lays not a claim. As to the mere humus, possibly, it may partly be in consequence of excess of this: humic acid, I believe, is considered prejudicial to vegetable life. But, then, what about inorganic properties? About these, practical men, in general, care very little; for there prevails in the main but one idea,—"plenty of muck," and a good thing too.

But, to come to the point, how is it that deep trenching in old kitchen gardens performs such wonders? Those who have tried this, as I have for years, can give ample proofs of its efficacy. Let us refer to the Carrot, the Onion, Parsley, Celery, Peas, &c., and examine into their failure, in order, if possible, to approach the cause. The Carrot is notorious for the grub in old kitchen gardens, but proves different under field culture. I know a village, not far from here (Tarpole), adjoining many fields of old rest land, which has been, in the main, appropriated to cheese-making for centuries. The land all round this district, for some two or three square miles, is perfectly identical in character with the village gardens: the cottagers on old plots are as loud about the ravages of the grub as other folks; whilst there is now growing, on freshly broken-up fields adjoining, as splendid crops of Carrots as ever eye rested on. We find it the same in our gardens: I have sown Carrots here for thirty years, and, as far as my memory serves, I have never had three crops of sound, clear, and keeping Carrots, at least of the larger kinds. I have, however, had many good crops of the early *Horn* kind. The only good Carrots I ever had, of the large kinds, were obtained by deep trenching, bringing up some of the subsoil. As to the *Horn* Carrot succeeding so well in general, I confess to being unable thoroughly to account for it. One thing I may observe, and that is, the most successful crops of them are those sown very early: if the grub is produced only at a given period, and that a later one, such may account for it.

Then there is the Onion grub, another puzzler: deep digging is the only remedy I could ever find for this. All the manure in our stable-yard will not secure a crop of Onions; indeed, it is quite averse to their production on these old, hard-worn soils. Here, I find hard-rolling to be the main point in producing Onions. How this

may act is rather a puzzle, but still it is a fact; I suppose it to consist in producing a more steady and solidified growth, for the fly which produces the grub—the *Anthomyia ceparum*—ever prefers the loose-grown and succulent crops, as far as I have seen. Therefore, if anything will tempt the grub, or rather the fly, it is making the soil very rich in manure, and leaving it very loose, so that the young Onion may grow with inordinate rapidity.

Parsley, too, is particularly liable to canker on old and worn soils; though, in general, high manuring is of much assistance here. But I have a case in point as to the effect of fresh soils on Parsley. Last winter we planted a trellis of Apples on the *Paradise* stock, and, according to my usual practice, made platforms for them, introducing fresh, or "maiden" loam. Some of this loam became scattered about an adjoining border, on which I had Parsley sown, and, I believe, such Parsley was scarcely ever seen,—entirely without canker.

I come now to Peas, these are liable to two particular evils, if not three, on old soils. The first, shanking; the second, running to straw; the third, mildew. The shanking of Peas generally occurs when they are just commencing to show blossom; sometimes even when only a couple of inches in height. This shanking is, I fancy, almost unknown to fresh soils. My only plan is, to cover the ridge, over the Peas, with clean sand: through this they come clear enough, but then this is fresh material. Running to straw is a great evil on old soils; this is, doubtless, a consequence of vegetable glutony. The ground is almost choked with manures from abundance of humus up to fresh dung in as many cases, and the plant takes up more than is requisite to complete fructification. The absorbing powers are ahead of, and an overmatch for, the elaborative action. Mildew is the bane of late Peas. This, too, is more chargeable on old soils than on fresh ones. It stands thus, as I think,—the mildew never prevails to an injurious extent until the hot weather of summer, accompanied by drought, occurs; and the stronger, or more rapid, the previous growth, if suddenly arrested, the more the mildew gets ahead.

This also is the case with Swede Turnips. In all cases that have come within my knowledge, deep digging is the chief remedy within reach; the addition of fresh, or charred, materials, scarcely of secondary importance. The deep digging, I suppose, acts by bringing near the surface inorganic materials, of which there are, generally, plenty beneath any given plot of ground; and then,—without recognising the doctrine of excrementitious matters, as it has been held by some,—who knows but some of the remains of former gross and pampered vegetable crops may be, in some degree, noxious to a succeeding crop? But there are various materials to be obtained with tolerable facility to freshen the soil,—such as charred rubbish, rotted turfey soil, from commons or road sides, and the limy rubbish of old buildings. Such and some other things are very eligible to correct the evils complained of.

These all mixed, or any of them, should be applied near the surface, in spring, after an autumn's trenching and ridging; the ridges levelled for spring croppings, and the dressing forked in near the surface. I consider that old gardens should be trenched every second or third year. Our readers must remember, that it is not a stint of labour that renders gardens continuously productive.

R. ERRINGTON.

LOOKING ABOUT US.

THE NURSERY OF THE MESSRS. VEITCH, AT EXETER.

(Continued from page 21.)

I FIND that I must condense my imperfect recollections, and will, therefore, confine myself to a few prominent features. First, I will refer to some that are likely to be interesting to our amateurs, who derive so much gratification from these pet plants in their little greenhouses.

We found a low, useful, span-roofed pit, filled with young Azaleas and Camellias, the chief expense of which, besides the glass, would be the low brick walls at the sides, the sashes being supported in the middle by a stout rail, and that kept in its place by a few, stout, neat posts. Few of the best pot greenhouse plants (and the specimens of many were very fine) were wholly exposed, but what might be termed open standing beds were provided for them. Some were formed just like so many pits, but all open, the front and back being neat posts, painted white, with slim, white-painted rafters between them, and not so high but that all could be covered in a few minutes, when necessary, with thin canvass or bunting. The principle is here carried out in everything,—if a thing is worth doing at all, it is worth doing well, and just because in the end the doing it well is the cheapest way to do it,—a matter of first import to the mercantile tradesman. Many a rare plant is irretrievably ruined from its pot being exposed to a burning sun in July and August.

Besides these pits, there are cool houses filled to overflowing with trained Azaleas, and other plants,—an elegant span-roofed house for Heaths,—with slate shelves round the sides and the centre, occupied with a platform pit, bounded by brick walls, filled with earth and open rubble, and covered with gravel and sand, on which the pots are placed. Similar houses are appropriated to mixed collections, and were, on our visit, filled with elegant Fuchsias (grown on the one-stem system) and Balsams. The conservatory consists of a centre and two wings, ornamented chiefly with creepers on the roof, and Camellias planted out, rich with shining foliage, and well set with buds. There are two features particularly worth noticing. First, the paths are paved with flat pebbles, about the size of Lapstone Kidney Potatoes, with one of their ends upwards. When so neatly done as here, they make a clean, even, neat path. Secondly, along the sides of this pathway are placed, at something like regular intervals, a number of small, round, stone tables (or what appear to be such, for paint and sand are such deceivers), about fifteen or eighteen inches in diameter, for the reception of nice flowering plants in winter and spring. We used to talk of storers, but here the principle is openly recognised, and provision made for carrying it out in a systematic manner. From the roof of this conservatory the *Lapageria rosea* was dangling in beautiful blooms, but, though very interesting there, it did not present such a good proof of cultural skill, as a fine plant in the heath-house, grown in a large pot, and trained parasol fashion, great numbers of blooms hanging gracefully all round, looking quite as pretty as the plant of the *Hexacentris Mysorensis*, with which the same firm graced the exhibitions several years ago. Mr. Veitch corroborated all that has been advanced by Mr. Beaton, respecting the treatment of this plant, namely, the necessity of thorough drainage, combined with abundant moisture.

As alike interesting to amateurs and gardeners, and showing the nature of the climate, I would just mention four plants, growing vigorously and blooming freely, against the ends of houses, with a pathway between them:—1. *Indigofera Australis*, a perfect mass of pink and gracefulness. 2. *Fuchsia Dominicana*, covering the end of the house, and one mass of bloom, produced almost solely from the ends of shoots of moderate growth. To ensure this equality of growth all over, it appeared to me, from inspecting the plant, that the smaller middle-sized shoots had been allowed to grow on; but the stronger ones had been freely cut back, so as to produce two or three shoots of moderate size. Most of these shoots stood out free from the wall, presenting over the whole a somewhat even surface of bloom. The plant continues to bloom during most of the winter, with the assistance of some sashes placed against it. 3. *Fuchsia pendulina*, almost as great an ornament as *Dominicana*; and raised also, as far as I can recollect, by the indefatigable foreman, Mr. Dominy, from *serratifolia*, crossed

by some other species. 4. *Cianthus Dampierii*,—which I have never tried, but which is generally represented as one of those beautiful, miffy things, which baffle the skill of many of our best cultivators,—is here growing vigorously,—threatening, some day, to occupy as much space as its neighbours the Fuchsias,—blooming profusely, and, what is best of all, seeding plentifully.

Beautiful as the *Cianthus puniceus* is, it is nothing to *Dampierii*. Those who have never seen it, may form some idea of it by imagining a large black moth's-head, like a patch, placed in the centre of the blossom of *puniceus*: altogether it has no rivals in its pretensions to beauty, except some of the most lovely of the Orchids. So well have they managed to get this fine plant to thrive here, that Mr. Veitch contemplates trying it as a bedding plant. They have not been without their failures, too, and chiefly arising from the attempt to shift and reshift it from pot to pot. Like the generality of other plants, whenever it gets to any size, shifting it from one pot to another is almost sure to injure, if not kill it, from the habit it has of sending down its roots as deeply as possible, and the great ease with which these roots are injured. Mr. Veitch said it was found in poor, deep, sandy soil; and transferring the plants when very young to such soil, in a pot of good size, or to ground of that character, seemed to be the only mode to get it to grow successfully. A good specimen in a pot would be a fine object, and I hope some friends will get very young plants, and try them on the one-shift system. It must have no stagnant moisture about its roots.

Those who cultivate large collections would revel in the fine assemblages of stove plants and Orchids,—all in good health, but few of which were then in bloom. From among the mass, I must select some features as especially worthy of notice. First. The hybrid Orchids raised from seed by Mr. Dominy. One was a purple Calanthe, perhaps not so interesting as *veratrilifolia*, or its male parent, but valuable as showing what may be done in this new field. The others were chiefly Cattleyas, all somewhat different from their parents, and with no great improvement in either; but also showing that Orchids may, with a man like Mr. Dominy, be made to sport like Calceolarias and Pelargoniums, and then what will become of many of our specific distinctions.

A second feature is the great variety and luxuriance of Pitcher plants,—producing their forests of flowers, not in scores, but hundreds. Let no one suppose that such success can be equalled in a cool stove. I believe the success here to be greatly owing to giving the plants the very treatment they like, as the whole of the *Nepenthes*, &c., seemed to be thoroughly at home. The house has a path round it, and a tank for its centre, and on supports across this tank, as well as on its sides, the Pitcher Plants are clustered. The water in the tank is kept in motion by means of turning a wheel. A high temperature, and an atmosphere saturated with moisture, could thus be easily obtained. The results show that they like what they get.

In this house, and elsewhere, were assembled a few striking novelties, which will be heard of ere long. The first is a Caladium, with strong hastate foliage, like a Strelitzia, but the leaf hanging down, almost parallel with the stiff, upright leaf-stalk, as if hinged at the top. The leaf is blotched with white along the middle. Secondly, two small, neat Selaginellas,—different from what I have before seen; and two larger-growing ones,—one, with the exception of the greater size, slightly resembling *umbrosa*, and the other finely pinnated, like our best-leaved Acacias. Thirdly, and here I must stop, a beautiful, new, strong-growing Fern, forming its fronds a little in the way of *Adiantum pubescens*, only the main part extending to a great length. The ground colour of the main part, and also of the base subdivisions, is of a pale green, with a broad stripe of a mealy-white down the centre, being the only instance, so far as I am aware,

where such variegation has presented itself in Ferns. A Fern-grower could hardly keep his mouth from watering at the sight of it.

I have already alluded to the fine specimens of Araucarias, &c., along the cross walk from the conservatory. In moving these, a number of years ago, a man pulled at one plant, which was rather unmanageable, so vigorously by the head, that he and the head together went plump into a neighbouring ditch. I need not say where a great many would have sent the man afterwards; but, though the Araucaria was planted, it was felt very unlikely that it would ever make a fresh head for itself. However, the wound healed over, a protuberance formed, a young shoot issued forth from that protuberance as a new leader, and now—with the exception of the tree being thicker there, and the side branches rather nearer each other—this identical tree is as fine, if not finer, than its uninjured brethren. I lately met with several instances of this noble tree forming a fresh leader for itself when the top was destroyed. Whole quarters of Araucarias, Deodars, &c., of good size are planted in large tubs, and then the tubs plunged out of sight, so that, by paying a little more, a gentleman can thus make a fine effect at once, without the risk of a plant dying, or suffering by moving.

The trained trees of Peaches, Apricots, Cherries, &c., on the wall, were so strong and healthy, that I involuntarily thought of the lopping such trees, as lately referred to, when taken to a gentleman's garden. A house, appropriated to Vines on the roof, had a bed in the middle so thick with young Vine-stems that you could not see through them, and yet the buds seemed nice and plump. They were to be removed to the front of a wall, to complete the ripening process. In an orchard-house, Mr. Veitch had been trying some of his new Peaches and Apricots, especially those from Syria. Already an account of some of these has appeared, and here, and also on walls, some looked very promising, especially late kinds. The trees in pots, that had fruited, had already been partially pruned. The new kinds on the walls were in the highest luxuriance, and, therefore, every chance was given of proving what they would be worth. Part of this experimental wall was covered with sashes. The Stanwick Nectarine was grown on the exposed and the covered part, and, though in both cases the fruit was plentiful and fine, many of the best had an unmistakeable tendency to crack. I suggested what I thought would be likely to counteract the cracking, and, it is rather singular, the only tree I saw at another place, that was heavily loaded and free from all cracking, was enjoying the suggested conditions. These new fruits will be judged as to their merits by the highest authorities. The suggestion as to the Stanwick was simply this, that it required more heat, to expand the epidermis, or skin of the fruit, to meet the supply of nourishment which it was absorbing by the roots. The confirmation of this idea will appear in a future number.

In conclusion, I will allude to two facts. The first is, that neatness and order were everywhere apparent; and the grounds were so clean, that if there were many weeds about above one inch in height I failed to discover them, though possibly such might be found by those who knew where to look for them. A gardener, now no more, once offered me half-a-crown for every weed that I could find an inch in height. Few of us would be certain of bread and water, were we to offer such rewards for such peculiar discoveries.

The second fact is, that on entering the grounds, late in the afternoon, I noticed several groups of private soldiers, leisurely walking about by themselves, and admiring the shrubs and flowers. The privilege had been long enjoyed by the different regiments and battalions quartered in Exeter. The same benefit had also been freely enjoyed by the people of the neighbourhood. Such facts are honourable to all parties. I was, therefore,

much grieved to learn, that, for several nights before our visit, some of the ill-disposed of the soldiers had got into the grounds after dark, took fruit, damaged the fruit trees, and ill-used and threatened Mr. Veitch's servants. Many, after this, would have altogether taken away the privilege of entrance; but there our well-disposed brethren in arms were walking, without let or hinderance, as if nothing unpleasant had happened. Let us trust that such large-hearted greatness of mind met its due reward, and that the young and thoughtless were thoroughly ashamed of such conduct. Our worthy defenders never stood more high in public estimation than now,—not merely for their heroism, but for their patient endurance and manly virtues. Pity it would be, if the misconduct of the few should bring disgrace upon the many. Every right-thinking man would guard such a privilege, as if a direct appeal were made to his conscience and honour.

We were anxious to see the equally-celebrated rival establishment of the Messrs. Luscombe and Pince, but it was dark before we left the grounds of the Messrs. Veitch, and we had to leave Exeter by five o'clock next morning. That pleasure we hope, with their leave, to have some other day.

R. FISH.

POMPONE CHRYSANTHEMUMS.

SEEING that one of your correspondents wishes to know the meaning of that name, I beg to say, in the first instance, that the word *Pompone* is misspelt in nearly all the nurserymen's catalogues. It should be *Pompon*, being a French word, meaning a tuft; and, as most of these varieties originally came from France, it stands to reason they are called *Chrysanthème Pompon*, or tufted. The old favourite, but pretty little *Rose de Meaux* is, also, called *Rose Pompon*.—E. PERSAC, Exeter.

THE BEST RIBBON BED IN THE KINGDOM.

"HOETULANUS," at page 25, has not come within many degrees of comparison, between his bed and the best bed in the kingdom. Twelve inches of white, and twelve inches of dark purple down by the side of it, and next that thirty-six inches of white again, and the same from the opposite side of the bed and border, make but a mass of three tints of white, with a selvage of purple within a foot of the edge, which is a very poor conception of the value of colours. *Mangle's* is not a pink, but the weakest tint of pink in all the bedding plants, save some discarded Verbenas. A foot of it, with its white leaves, and a foot on each side of it of our best white-coloured flower, reads thus,—a double quantity of white required to guard one quantity of pale pink from being destroyed by one quantity of dark purple, with one quantity of white edge to it. With a true pink, or any shade of pink in the centre of that mass, the conception would not be much improved. The bed would not be according to rule: it is a fancy bed, which does not much strike the fancy of—YOUR REPORTER.

THE HOLLY.

THE recent warm summers have had their effect even on our hardy, beautiful Holly. I observe the trees—for they approach that character—are loaded with their golden berries this year; and, therefore, a word or two on its culture, with a list of the varieties, may be useful. Though almost universally cultivated, yet the many beautiful varieties are not sufficiently known and appreciated as they deserve to be. I lately saw a collection planted as an avenue, in the Handsworth Nursery, near Sheffield, that astonished even me, who have seen almost every garden and nursery in England. The great variety of foliage, and the beautiful variegation of the leaves of many of them, are really admirable. Now, as the Holly will grow in almost any soil free from stagnant water, will thrive under trees not too close, and will bear a more smoky atmosphere than almost any other evergreen, I think it would be wisdom, in landscape-gardeners and planters, to recommend the planting of these beautiful varieties more generally. As a hedge-plant in this country, there is none equal to our common Holly, if a little extra pains are taken in preparing

and enriching the soil in which the hedge is to be planted, and the keeping it clear of weeds, and the soil frequently stirred until the fence is established. But my object, in this paper, is to recommend the plant as an ornament to the shrubbery, border, and pleasure grounds.

The Holly may be successfully transplanted from now until the end of March, providing the weather is mild and open. If large plants are to be removed, it will be desirable to prepare them for the removal, by digging a trench round the tree the previous season. The space enclosed within the trench should be in proportion to the size of the tree; if it is a very large one, three feet would be the diameter of the ball; if less, of course the space should be less. It is not wise to attempt to carry away too large a ball, for in that case the ball sometimes breaks, and great injury to the roots is the consequence. All the roots extending beyond the intended ball should be cut off with a sharp knife, and the space made by the spade in digging the trench should be filled up with fresh turf loam. The tree will, during the following year, throw out into this fresh soil a large quantity of young roots, which will almost insure success in the removal the next year. In nurseries that are well managed, the Hollies, and, indeed, all evergreens, are transplanted at least every other year, and thus success in removing them is made sure. The question of any purchaser, in buying large evergreens of a nurseryman, should always be,—have they been transplanted lately? and the purchase should be regulated accordingly. It is true, the trouble of removing large quarters of evergreens, in a nursery, is considerable, and they are obliged to charge a larger price for such transplanting; but then the certainty of the shrubs growing amply repays the small additional outlay.

The ground to receive such trees should be duly prepared for them, by being thoroughly drained, well trenched, and cleared of bad weeds, such as Docks, Thistles, Nettles, Couch Grass, &c.; and, if this can be done the year before, the ground will be in fine condition to receive the plants. A crop of Potatoes, or Turnips, might be taken off the ground, which would help to clean it, and repay the expense.

Propagation by Seed.—The common Holly is raised from seed, and even the varieties sometimes produce seed. Indeed the varieties have never been obtained that way, but the seed of a variety is not sure to produce the same variety again. Yet I would recommend the saving and sowing of the seeds of every variety, for the chance is, that still more varieties may be produced. Gather the seed as soon as it is ripe, and place it in a heap in some safe, out-of-the-way place. Cover it with soil three or four inches thick, and leave the berries there, to rot off the outer covering, till the autumn following. Then, having a piece of ground well dug, draw drills eight or nine inches apart, and sow the seeds in the drills, covering them up immediately. I prefer sowing in autumn, because, before the ground is ready in spring to receive the seeds, many of them are apt to vegetate. Having sown the seeds no further care is necessary, except keeping the ground clear of weeds. By sowing in drills, an advantage is gained of being able, after the seed has come up, to stir the ground, with a hoe first and a small fork afterwards.

By Grafting and Budding.—The stocks are two or three-year-old seedlings of the common Holly. Strong, free-growing plants should be preferred. The grafting should be done in March, the budding in July.

By Layers.—The branches of the Holly emit roots pretty freely, if covered with fine soil, two inches deep. The process of rooting will be greatly assisted, if the shoots are slit half-way through, in the same manner as florists do their Carnations. In two years time they will be sufficiently rooted to be removed to the nursery rows.

By Cuttings.—Ripened young shoots, put in a thin layer of sand, in a shady place, under handglasses, will strike readily, but are several years in making good plants. The lower leaves should be trimmed off, and the bottom of the cutting made smooth with a sharp knife.

The best mode of propagating the varieties of the Holly is that of grafting, or budding, on vigorous stocks; though the variegated varieties will keep their variegation better on their own roots.

In conclusion, I may remark that, to cause vigorous growth, the annual application of well-rotted manure, to either hedges or single plants of the Holly, is highly advantageous. Very little pruning is requisite; but, where there is more than one leader, it will be necessary to cut off the superfluous ones; and any rambling side-shoots should be cut off, to produce a sym-

metrically-shaped tree. Another point is, to allow sufficient space for each tree to show off the shape to advantage, and prevent overcrowding. Many of the finer varieties may be planted as single objects on the lawn and the pleasure ground.

VARIETIES OF THE COMMON HOLLY.

(*Ilex aquifolium*.)

- Abo marginatum*. Silver striped.
- A. pictum*. Silver blotched.
- Aureo marginatum*. Gold striped.
- A. pictum*. Gold blotched.
- A. pictum major*. Large gold blotched, new, and very beautiful.
- Altaclarens*. High-Clerc. A beautiful variety.
- Angustifolium*. Narrow leaved.
- Ciliatum*. Fringed edges, curious, and beautiful.
- C. major*. Broader leaved.
- Crassifolium*. Thick leaved, curious.
- Crispum*. Curled leaved, very distinct.
- Donningtonia*. Donnington's. A fine variety.
- Ferox*. Hedgehog. The surface of the leaf is covered with prickles.
- F. argenteum*. Silver blotched.
- F. aureum*. Gold blotched.
- Flavum*. Yellow.
- Fructu albo*. White berried.
- F. luteo*. Yellow berried.
- F. nigra*. Black berried. The latter three are curious when in fruit.
- Handsworthiana*. The Handsworth Holly. A distinct, fine variety.
- Heterophyllum*. Various leaved. A striking variety in a collection.
- Hodgkins*. A broad-leaved, fine variety.
- Latifolium*. Broad leaved.
- Laurifolium*. Laurel leaved. Very fine.
- Myrtifolia*. Myrtle-leaved. Very beautiful.
- Marginatum*. Thick margined. The edge of each leaf is raised above the central part.
- Monstrosa*. Monstrous. A curious variety.
- Medio pictum*. Middle painted. Distinct.
- Ovata*. Oval leaved.
- Pendulum*. The Weeping Holly.
- P. variegatum*. The variegated Weeping Holly.
- Platyphyllum*. Very broad leaved.
- Recurvum*. Bent back leaved.
- Smithiana*. Smith's.
- Senescens*. Aged spineless leaved.
- Shepherdii*. Shepherd's. A fine variety.
- Serratifolia*. Saw leaved.
- Tortuosa*. Twisted leaved. Very strikingly curious.
- Whittingtonii*. Whittington's. Distinct and beautiful.

HARDY SPECIES.

- Ilex Balearica*. Balearic.
- I. Canariensis*. Canary Island.
- I. cassine*. Cassine.
- I. cornuta*. Horned. New and beautiful.
- I. Dahoone*. Dahoone.
- I. Dahoone dipyrena*. Two seeded. An Indian species; quite hardy.
- I. furcata*. Forked. New and distinct.
- I. latifolia*. The Japan broad-leaved Holly.
- I. Laxiflora*. Loose flowered. Distinct.
- I. Madeiriense*. Madeira Holly. Fine broad leaves.
- I. opaca*. Dense leaved.
- I. Vomitoria*. Emetic. Florida.

T. APPLEBY.

CLEMATIS LANUGINOSA.

I FORGET now what I said about *Clematis Sieboldii*, but all these eastern Clematises require to be cut down to the ground every year, for the first five or six years after planting out; and the right time to cut them is, when the young wood has just started fairly for the season, and that will be according to the earliness or lateness of the spring. *Lanuginosa* is a much more powerful grower than *Sieboldii*; but I would not make that an excuse for cutting it earlier in the spring. Their roots have some analogy to bulbs, and, if you cut them so severely before

they are in motion, the chances are that they will not start at all at the right time. All our finest climbers, inside and out, ought to be cut down to the ground, until they attain their size and strength. The only secret I ever kept, was about *Beaumontia grandiflora*. I would engage to eat roasted snap-dragons for a month, if I could not flower every *Beaumontia* in England, that is of full age and size, in three years. The first thing I would do, would be to cut down every one of them to the collar of the plant; and when I had them in bloom I would keep them so, and all new plants from them, for the rest of my life, without a single failure, by merely increasing them from layers of the flowering-sized wood. That was just how I had two magnificent plants of them in the conservatory at Shrubland Park for years, and another half-magnificent plant in the geranium-house there, its roots being in the orchid-house. Also, two fair plants of them in pots, so as to make the bloom last all the longer. By the same trick I had all the *Tacsonias* in flower-bud on the conservatory wall, when I threw the spade over it; and they were so taken at my leaving, just as the winter was coming on, that they have not, all of them at once, showed flower-buds since. Col. Bombardum used to say, that the more he beat his dog or his wife, the more attached to him they became, which may be doubted; but there is no doubt about the fact, that the more we cut down our climbers, till they are of full age and strength, the more they will flower, and the longer they will keep in the flowering humour.—D. BEATON.

A NEW SPECIMEN OF ACTINIA, AND A RARE MOTH, AT TORQUAY.

THERE have been a few rarities taken on this coast (Torbay), of which, being likely to interest your readers, I forward an account. A few days ago Mr. G. King, our local entomologist, whilst cruising in the bay, in his yacht the *Sparrowhawk*, dredged up a beautiful and entirely new specimen of *Actinia*, of the genus *Bunodes*, which Mr. P. H. Gosse, who employed Mr. King, named the *Bunodes coronata*. In the same locality, and at the same time, several specimens of the *Sagartia Coxiana*, of Miller, were also brought up. The depth of water was twenty fathoms. It seems, indeed, that these two kinds are invariably found together in deep water, or, at least, not far distant from each other. The *Coronata* is a very showy kind, and is generally found adhering to shells. It is marked with lines of warts, which are small, of unequal size, and arranged irregularly.

I may also add, that a superb specimen of the *Leucania vitellina (noctua)* moth was taken here recently by Mr. King. It is deserving of notice, because this insect, which is found somewhat abundantly in France, is extremely rare in England,—only five or six specimens, according to that eminent anthority, Mr. Doubleday, having been taken on the British coasts.—J. T. W., Torquay.

A CHEAP BAROMETER.

A VERY cheap barometer is made by dissolving some camphor in alcohol, and then throwing into the solution some soda. The camphor precipitates in snowy flakes, which are collected by passing the mixture through a filter, when they are to be put in a vial containing clear alcohol, in which there has been already dissolved as much camphor as it will take. The vial is then tightly corked and put where it will not be disturbed, when it will be found to be an excellent index of the weather. In fine weather the precipitate will rest on the bottom, but on the approach of a storm it will rise to the surface, with a tendency to the quarter opposite to that from which the storm is coming—the flakes being affected electrically.

HAGUE'S KIDNEY POTATOES.

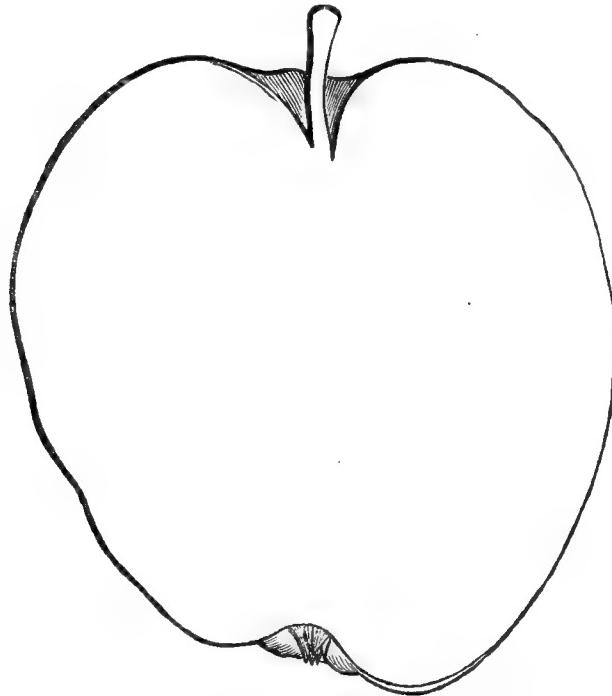
My attention has been called to several statements in your journal, in which different persons are alleged to have raised these Potatoes from seed. A degree of obscurity seems to rest about the question, and one speculator ascribes their birthplace to *Bartsey*, a place no one ever heard of: I suppose he means Bardsey, the residence of the late Major Hague, my father. Mr. Appleby is also mistaken in naming a schoolmaster, at Newton Kyme, as their originator. The true history of this excellent variety, called *Hague's* (not Haigh's) *Kidney* is this. The seed

was sown by myself in February, 1828. The first plant was raised by me at Thorner, near Leeds, and was afterwards propagated by me at Bramham, the place of my present residence, where these facts are generally known and acknowledged, and where I shall be glad to answer any inquiries and give any information on the subject.

The *Lapstone* and *Hague's Kidney* are synonymous,—*Hague's Kidney* being first called *Lapstone* by a gentleman's gardener in the neighbourhood, from its fancied resemblance to that implement in my trade.—JOSEPH HAGUE, Bootmaker, Bramham, Tadcaster.

FRUIT AND FRUIT TREES OF GREAT BRITAIN.

(Continued from page 364, Vol. XV.)



No. X.—AMERICAN MOTHER APPLE.

ONE of the best autumn Apples we have met with for a long time is one called "Mother Apple," introduced to this country from America, by Mr. Rivers, of Sawbridgeworth. Though the fruit is new, the name is old, and care must, therefore, be taken not to confound this variety with those that bear the same name in this country. There is a "Mother Apple" grown in some of our cider districts,—a little, ovate, yellow fruit,—having the unpalatable flavour of a Bittersweet; and then there is the *Oslin*, which, in some parts of Scotland, is called "Mother Apple." Both of these are perfectly distinct from that which is now under consideration. To preserve that distinctness, I have, therefore, called this variety the *American Mother Apple*.

A great objection to many of our best varieties of Apples is, that they are difficult of digestion, and many, who are fond of their flavour, are debarred from the enjoyment by visions of future suffering. It is, therefore, with pleasure that we hail the acquisition of any new variety that has not that objection.

The fruit is slightly fragrant, above medium size, of a conical shape, with an uneven and undulating surface, and generally higher on one side of the eye than the other; in appearance it is not unlike a *Cornish Gilliflower* but without being "snouted" towards the apex. Skin, on the shaded side, of a deep golden yellow, mottled and dotted with faint crimson; and on the side next the sun it is covered with deep crimson, which is streaked and mottled with darker crimson, and strewed with minute dots of russet. Eye small, closed, and tapering, set in a moderately deep basin. Stalk three-quarters of an inch long, slender, and inserted in a deep cavity. Flesh yellowish white, remarkably tender, crisp, crackling, and very juicy. Juice so abundant as to flow freely out when the fruit is cut; very refreshing, and with a balsamic flavour.

A first-rate dessert Apple, ripe in October, and appears as if it would keep till Christmas. The tree seems well adapted for small gardens, and bears freely. Mr. Rivers cultivates it on the *Paradise* stock, in the form of small bushes; and, when so grown, it cannot fail to be a favourite with every one who has space in a garden for a tree of such dimensions. The variety originated on the farm of a General Gardener, of Bolton, in Worcester County, New York, and is among the most highly esteemed of American dessert Apples.—H.

ROSE-BUD DAHLIA.

It will be in the recollection of all those to whom I am indebted, that all my credit was pawned last month, for three years, on the value of *Rose-bud*,—the best Rose seedling Dahlia at the Crystal Palace Show, according to my way of judging, also according to the judgment of Doctor Lindley. But it had no prize there, and two other seedlings of the same blood had each a prize over the head of *Rose-bud*. However, in order to lessen my trouble, and the anxiety of my friends, the florists acted most honourably,—they gave the first prize in their schedule to *Rose-bud* at the Grand National Dahlia Show, at St. James's Hall, London, and no prize to the other two. Therefore, my credit is now as good as ever it was; and "GREEN-HAND" ought to acknowledge it publicly.—D. BEATON.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 24.)

APPLES.

[D. signifies that varieties so marked are to be used only for the dessert; K., for kitchen purposes; and C., for cider-making. Those marked K.D. are applicable either to kitchen or dessert use.]

FLOWER OF KENT, K.—Large, roundish, flattened, and irregularly ribbed. Skin dull yellow, tinged with red, bright red next the sun. Flesh greenish yellow, exceedingly juicy. Eye small. Stalk an inch long. October to January.

FORGE, K.—Medium sized, round. Skin a golden-yellow colour, mottled with crimson, and dark red next the sun. Eye small and closed. Stalk very short. Flesh yellowish white, tender, juicy, sweet, and finely perfumed. A useful apple. The tree a great and constant bearer. October to January.

FORMAN'S CREW, D.—Below medium, oval, broadest at the base. Skin yellow and russetty. Stalk short. Eye small. Flesh greenish yellow. One of the best dessert apples. November to April.

Formosa. See *Ribston Pippin*.

FRANKLIN'S GOLDEN PIPPIN, D. (*Sudlow's Fall*).—Medium size, conical. Skin bright yellow, dotted with dark spots. Stalk short, slender, and deeply set. Eye deeply sunk. Flesh pale yellow, tender, and richly aromatic. A first-rate fruit. October to January.

FRENCH CRAB, K.D. (*Claremont Pippin, Easter Pippin, Ironstone, Young's Long Keeping*).—Large, globular. Skin dark green, with a brown blush next the sun. Stalk short and slender, deeply set. Eye small, almost closed. Flesh pale green, firm, and pleasantly sub-acid. An immense bearer, and remarkable for keeping, under favourable circumstances, for two years.

Frith Pitcher. See *Manks Codlin*.

Fry's Pippin. See *Court of Wick*.

Garnon's. See *Court Pendu Plat*.

Garret Pippin. See *Borsdörffer*.

Girkin Pippin. See *Wyken*.

GLORIA MUNDI, K. (*Baltimore, Mammoth, Ox Apple, Monstrous Pippin*).—Of very large size, roundish, and flattened. Skin pale yellowish green, with a faint tinge of blush on one side. Eye large and open. Stalk short and stout. Flesh white, tender, and juicy. October to Christmas.

GOLDEN KNOB. D.—Small, ovate, and a little flattened. Skin yellow, much covered with russet, with a reddish tinge on one side. Eye open, stalk very short. Flesh greenish white, firm, crisp, and juicy. December to March.

Glory of the West. See *Dutch Codlin*.

Glory of York. See *Ribston Pippin*.

Golden Drop. See *Court of Wick*.

GOLDEN HARVEY, D.C. (*Brandy*).—Small, nearly round. Skin roughly russety, on a yellow ground, tinged with red next the sun. Stalk half an inch long, slender. Eye small, open, and shallow. Flesh yellow, rich, aromatic, and sub-acid flavour. A first-rate dessert fruit. December to June.

GOLDEN MONDAY, D.—Small, roundish, and flattened. Skin clear, golden yellow, with markings of russet. Eye small, and rather open. Stalk very short. Flesh yellowish white, crisp, sugary, briskly flavoured, and with a nice aroma. October to Christmas.

GOLDEN NOBLE, K. (*Waltham Abbey Seedling*).—A very large, globular, and handsome apple. Skin of a uniform clear, bright yellow. Eye small and deep. Stalk short. Flesh yellow, tender, and pleasantly acid, and bakes of a clear amber colour. A valuable kitchen apple. September to December.

GOLDEN PIPPIN, D. (*American Plate, Balgone Pippin, Bayfordbury Pippin, Herefordshire G.P., London G.P., Melton G.P., Russet G.P., Warter's G.P.*)—Small, roundish. Skin deep golden yellow, with white specks under the skin, dotted with russet. Stalk long and slender. Eye small and shallow. Flesh yellowish, rich, brisk, and highly flavoured. The queen of dessert apples. November to March.

GOLDEN REINETTE, D. (*Dundee, English Pippin, Elizabeth, Kirke's Golden Reinette, Megginch Favourite, Princess Noble, Wyker Pippin, Wygers*).—Below medium size, round, and compressed at the ends. Skin greenish yellow, flushed and streaked with red next the sun, dotted with russet. Stalk long. Eye large, open, and shallow. Flesh yellow, sugary, and richly flavoured. October to January.

GOLDEN RUSSET, D.—Medium sized, ovate. Skin greenish yellow, covered with yellow russet. Stalk short. Eye small and close. Flesh yellowish white, crisp, and pleasantly aromatic. December to March.

GOLDEN WINTER PEARMAIN, K.D. (*King of the Pippins, Hampshire Yellow, Jones' Southampton Pippin*).—Medium sized, abrupt pearmain-shaped. Skin rich yellow, tinged and streaked with red next the sun. Eye large and open, set in a deep basin. Stalk long and stout. Flesh yellowish white, firm, juicy, and sweet, with a somewhat aromatic flavour. A valuable apple. October to January.

GOOSEBERRY PIPPIN, K.—Medium sized, roundish. Skin deep lively green. Eye open. Stalk short. Flesh greenish white, very tender, and delicate. A very valuable, late-keeping, culinary apple. In use from November till the following August.

GRAVENSTEIN, K.D.—Large, round, flattened at the ends, and angular. Skin fine straw colour, streaked with red next the sun. Stalk very short and deeply set. Eye large, wide, and deeply set. Flesh pale yellow, crisp, aromatic, and vinous. A very valuable apple. October to December.

GREENUP'S PIPPIN, K.—Above medium size, round. Skin of a pale straw colour, with a fine bright red cheek next the sun. Eye closed. Stalk short. Flesh pale yellowish white, juicy, sweet, and brisk. October to December.

GREY LEADINGTON, D.—Medium sized, oblong or conical, and ribbed. Skin yellow and russety, with pale red on the side exposed to the sun. Eye large and sunk.

Stalk short and very stout. Flesh tender, juicy, sugary, and finely perfumed. An excellent dessert apple. In use from September to January.

HALL DOOR, D.—Medium sized, roundish. Skin greenish yellow in the shade, and streaked with red on the side next the sun. Eye small, and set in a rather deep basin. Stalk short, and inserted in a deep cavity. Flesh white, firm, and juicy. In use from November to March.

HAMBLEDON DEUX ANS, K.D.—Large, roundish, rather broadest at the base. Skin yellowish green in the shade, and dull-red, streaked with broad stripes of a deeper red, on the side next the sun. Eye small and closed. Stalk stout and short. Flesh greenish white, firm, crisp, and richly flavoured. One of the most valuable keeping apples. In use from January to May.

Hampshire Yellow. See *Golden Winter Pearmain*.

HANWELL SOURING, K.—Medium sized, roundish-ovate. Skin greenish yellow, with a red blush. Eye closed. Stalk very short. Flesh firm, crisp, and briskly acid. Worthy of general cultivation. December to March.

HARVEY APPLE, K.—Large, roundish-ovate. Skin greenish yellow, with markings of russet. Eye small. Stalk short and slender. Flesh white, crisp, juicy, and pleasantly acid. A first-rate culinary apple. October to January.

Hardingham's Russet. See *Pine Apple Russet*.

Hawberry Pippin. See *Hollandbury*.

(To be continued.)

THE PARIS HORTICULTURAL EXHIBITION.

THE French people, in general, believe that they alone are the real originators of new ideas, and yet it is remarkable, that, of late years, the Parisians have shown a decided preference for whatever is said to be English, either in model or manufacture. We at home are accustomed to think most of the Paris fashions; and here the fashions of England, especially for gentlemen, are most in vogue. Hundreds of articles sold in shops are stamped with English names, and passed off as of English workmanship. At present, even the poor hawkers in the street are everywhere extolling the *Poires d'Angleterre*. The very paper on which I am writing has the "Bath" stamp; and, of course, no magazine or shop can be complete, without the words *English spoken* being displayed in large letters on the window or glass door. Whether the Parisians do well, in thus giving an English reputation to their own products and manufactures, is a question which, perhaps, most concerns themselves; but it is certain, that, so far as gardening goes, they have shown good taste, in seeking their models among the charming, fresh landscapes of the British Isles. With respect to plant-growing, the French are yet far behind us; but, in the getting up and general management of an exhibition, they have more order and arrangement than we. Nevertheless, so far as I have seen, they entirely overlook what in England is considered one of the chief attractions of a flower show—they provide no music.

The weather is delightful at present. There are thousands of gaily-dressed people walking in the Champs Elysées. The price of admission is only one franc. The Exhibition itself, particularly of fruit, is one of the best ever seen, and yet you never see more than fifty persons present. I think if I had counted the other day, I should not have made out anything like that number. Wherever I have seen a flower show here, there has been the same quiet monotony, compared with the lively throngs that flock to Chiswick and Regent's Park every summer. The contrast is all the more striking, that the French reproach us with being dull. It may be quite true, that amateurs, and others interested in the products exhibited, can very well dispense with sweet sounds on such an occasion; but, if a society has to draw its means of existence from the public who visit its exhibitions, it is evidently its interest to secure as many visitors as possible; and I certainly agree with Mr. Bohn, that the great majority of those who go to flower shows go as much for the pleasure of showing off, hearing the band, and seeing others, as for admiring the choicest productions of the garden. Divest our Exhibitions of the regimental bands, and let the weather be ever so fine, and ——; but no, our clever managers know better than that,

and it is not likely they will risk the chances of an experiment. Many a time, to be sure, I have had my organ of hearing put out of tune by the hoarse braying of old trumpets at the shows of the *Horns Tavern*, while the large silver cup (not the loving one) was being handed round; and "the Red Cross Knights" of the Surrey Gardens' band was tiresome enough. But no matter, you go to the *Horns Tavern*, Kennington, or the Surrey Gardens, and, if you do not see more people sitting and standing round the band than you see admiring the flowers and plants, then, I can only say, there must be something very extraordinary to be seen. What, then, must we expect, when we speak of the choice *morceaux* by the great composers, and which our military bands perform so well. Many a time have I noticed, when the Fusileers and the Coldstreams were beginning to peal forth some of the pieces from *Der Freischutz*, or *Lucia di Lammermoor*, that there was scarcely anybody in the tents to admire Tom Brown's astonishing collection of six Heaths, or Harry Jones' wonderful brace of Cucumbers.

Now, I have said this much respecting the financial success of horticultural exhibitions, to show that it must depend, to a considerable extent, on extraneous agencies, and that, if the Paris Society is to be self-supporting, there must be some change in its mode of securing a fund.

The Exhibition of the season was opened on the 26th ult., and, according to the programme, it is to close on the 3rd inst., but it is likely to be continued for a day or two longer.

The summer Exhibition occupied the centre of the *Palais de l'Industrie*, which was laid out as an English garden, studded with statues and ornaments, having a pretty lake, fountain, rustic bridge, and rocky ford,—all admirably designed and executed. At present, there is no garden, lake, or fountain, and the products are arranged on some sixteen or twenty large square tables, which occupy, in two rows, the greater part of the north gallery. There are several small collections of flowering plants and shrubs, besides Roses and Dahlias; but in this way there is nothing worth particular mention. Some of the fruit-growers in the vicinity of Paris have sent collections of fruit trees in pots. These, chiefly Pears and Apples, are well grown, and, for the most part, loaded with fruit. Some side benches are occupied with field and garden products,—such as seed and roots.

Of course, the articles which have most interest on this occasion are the large and beautiful collections of fruit, which have come from all the great fruit-growing departments of France. One or two collections have also been sent from Belgium, and the nearer States of Germany.

To give anything like a detailed notice of the sorts and varieties exhibited is obviously out of the question, even if it were desirable; for most of the growers have sent several hundred different sorts, and some of the collections contain, perhaps, more than a thousand dishes. It is to be regretted, however, that a great many of the Grapes have been sent in a very unfavourable condition to judge of their merits. For want of a little attention, in the way of thinning, the fruits are pressed against one another on the branches to such a degree, that they are not only flat, but much smaller than they would have been with timely care. By far the best collection shown is that of M. Rose Charneux, of Thomery, whose sorts are—*Muscat of Alexandria*, *Gros Dumas*, *Frankenthal*; *Gros Ribier*, the fruit of which is at least an inch in diameter; *Valencia*, a luscious white sort, and nearly as large as *Gros Ribier*; *Superb du Canada*, a pretty red variety; *Chasselas Napoleon*, of a rich light yellow colour, and quite transparent; *Gromier du Cantal*, nearly round, red, and of good size. There is, also, an incomparably fine black variety, called *Squiras*, which is of an oval form, tapering at the lower extremity, and beautifully bloomed.

Of the vast number shown by other growers, I shall only enumerate a few of the best sorts, and the best grown; but I may first observe, that the *Chasselas de Fontainebleau*, among the whites, and *Frankenthal* among the blacks, seem to occur most frequently. The best of the others are—*Grosse Perle*, large, oval, white; *Florence*, very black, and apparently a fine variety; *Verjus*, of a greenish-white colour, and remarkable for its large bunches; *Farogone*, black, large fruit, and finely bloomed; *Cornichon*, violet, long, and tapering at the extremities; *Gros Coulard*, a fine, large, round, white sort; *Cornichon Blanc*, more than an inch long, and tapering; *Cornichon Rose*, a remarkably large, oval sort; *Malvoisie*, a beautiful white variety, of good size; *Corinthe*, a pretty, yellowish sort, with long bunches of fruit, about the size of Peas.

Of Apples, there is a fine display, but the principal sorts are—

ReINETTE du Canada, *Belle d'Orleans*, *ReINETTE d'Angleterre*, *Belle Dubois*; *Api Noir*, about the size of *Pomme d'Api*, not uncommon in the London markets, but, as its name implies, very dark in colour; *Api Gris Rouge*, *Beauty of Kent*, *Cœur de Bœuf*, a large deep red sort.

The Pears, which seem to be most in favour among the different growers, are—the *Beurré Clairgeau*, a fine, richly rose-coloured sort; *St. Germain d'Hiver*, *Colmar d'Arenberg*, *Duchesse d'Angoulême*, *Belle Angevine*, *Belle de Bruxelles*, *Poire de Curé*, *Louise Bonne d'Avranche*, *Calebasse Monstre*; *Esperine*, a good-sized, and richly-coloured sort; *Doyené*, finely rose-tinted; *Beurré Superfin*, a desirable table variety; *Beurré Magnifique*, *Beurré Capiaumont*, *Calebasse Bosc*, *C. Imperiale*, *Belle et Bonne de Zees*. All these are first-rate sorts. They are of good form and colour, and a few are remarkable for their large size.

About a score of Pine Apples occupy the centre of one of the tables. These are mostly large, and well grown. The sorts are *Providence*, *Smooth-leaved*, *Cayenne*, and *Montserrat*. I have not seen any *British Queens*. But these samples are equal to what I have seen in England.

A few samples of other fruits, such as Nectarines, Peaches, Figs, *Reine Claude* and *Golden Drop Plum*, fill up a spare corner here and there.

I may add, in conclusion, that there has been a Meeting, or, as it is called here, a Congress of Pomologists, and, if there is anything interesting to be said, I shall send you a few notes as soon as I learn the result of its deliberations.—K.

QUERIES AND ANSWERS.

HEATING A ROW OF NINE HOUSES.

"Will you have the goodness to give me a few hints respecting the heating of nine houses in a row? The three centre ones have been built some time. One is heated by a small conical boiler, the other two by smoke flues. I intend putting up three more houses at each end,—three to be attached and three to be detached. Shall I have one boiler to heat the whole? or shall I have two, or even three? How would it answer to have a boiler at the back of the fernery to heat those three,—the small one, perhaps, that is now up, and put a larger one in its place to heat the other six? By the latter plan we should avoid wasting heat in the gravel path. I would like to have bottom heat in 2, 3, 5, and 6."—A SUBSCRIBER FROM THE FIRST.

[The mode of heating is purely a matter of taste and choice. Your proposal of two boilers, or even of three, would answer admirably, and you could hardly ever calculate on all giving way at once. The loss of heat, however, in passing a gravel path is a mere bagatelle, and, providing the main pipes there are placed in a hollow tube, or drain, little or no heat would be lost. Were we to heat such a range, and future economy in fuel and management an object, we would have one large boiler where your present small boiler is, or opposite No. 6, and have a second boiler placed near it for security, in case anything should suddenly happen with the other. We would then take a main flow and return pipe to each end, and work from them each individual house at will. If your boiler is low enough you can then give bottom heat to any house you please. But, consulting economy in heating, we would so far alter your present arrangement as to have all the houses requiring bottom heat, and the greatest top heat, together. For instance, even supposing you had a boiler to heat the tender fernery, which is all right, you would require to pass through a comparatively cool house, to give bottom heat to No. 5. Now, if the tender fern-house was taken from the east end to No. 4, west end, or to No. 3, you would have those requiring most heat together. On the same principle, No. 1 might be made a hothouse for plants, and No. 5 a cool-house, by which means the whole of the east-end division would require less heat than the west end. These matters would equally apply, if, for convenience, you had three separate smaller boilers. The risk is less than having only one large one.]

ADMITTING AIR TO A GREENHOUSE.

"Will you please tell me which of these two plans you consider best,—letting air through the front lights directly on the plants, or letting air under the stage, and so into the greenhouse? My

stage will be a close one, as I purpose placing my pots upon sand; but there will be a space of two feet under the stage, at the sides and front, from which I could ventilate, if you advise it, in preference to letting air direct upon the plants,—which, by the way, I have sometimes thought injured and chilled them. Under this stage, on the ground level, I purpose growing mosses, and, as my house will be both span and hipped roofed, I calculate I shall have sufficient light for this purpose. Will you give a list of about twelve mosses that you would recommend? I have only heat to keep out frost.”—C. R. LUCAS.

[Give air at the sides by all means. If the rough glass is good, and if common attention is used to air-giving, there will be no scorching. Get Hartley's glass,—some rough is miserable stuff, full of spots and scores, and that will burn. As you use little heat, the following Lycopods will suit your purpose:—*L. celopercuroides*, *L. clavatum*, *L. selaginoides*, *L. alpinum* (British), *L. Helveticum*, *L. denticulatum* (Swiss), *L. densum* (New Holland), *L. depressum* (Cape of Good Hope), *L. apodium*, *L. dendroideum*, *L. rupestre* (North America), *L. Carolinianum* (North Carolina). Place these in pots, well drained, in fibry peat and loam. Keep moist, but allow no drip on them.]

AMERICAN BLIGHT.

“ My Apple trees, of which I have very many, in a large garden, in the shape of espaliers and dwarfs, are very much infested with the American blight, or bug. I have used some spirits of turpentine during the spring and summer, but it appeared to do much injury to the trees, by destroying the foliage and young shoots, on which the insects had fixed themselves. I have heard of clay being used, in the form of a thick paint, by means of water. Do you know anything of its utility, and can you recommend it, or anything else?

“ Being desirous of brewing my own beer, I shall feel much obliged, if you, or any of your correspondents, will furnish me with directions for brewing twenty-four gallons of bitter ale of good quality?”—AN AMATEUR.

[Clay paint, not over thick, if persevered in, will settle the enemy; but when it cracks in the heat of summer, you must just damp the place again. A boy with a brush would go over a great many trees, as espaliers, in a short time. The clay prevents breathing, and thus destroys life. Some size mixed with it would make it stick the better, and do no harm. Double size, with a little water, would do of itself, but be more expensive than clay.

Will some correspondent be kind enough to answer the brewing question? We know some gardeners that could well do so.]

AMERICAN POMOLOGICAL SOCIETY.

THE seventh Meeting of the American Pomological Society took place on September 14th, in Mozart Hall. The last Meeting was held in Rochester, two years ago. Representatives were present from seventeen States.

The Hon. Marshall P. Wilder, President of the Society, took the chair. Delegates from other societies presented their credentials, and members paid their dues.

The President read his address. We give some extracts from it:

“ Gentlemen,—I rise to announce the opening of the seventh session of our National Association, and to perform a service which its Constitution devolves upon your presiding officer. Ten years have completed their course since the organisation of the American Pomological Society, in this commercial emporium. Some, who were active in its formation, have fulfilled their earthly mission, and now rest from their labours. Downing and others have passed away; but their names are still fragrant in our memories; and their works still live. May they live for ever to enlighten and bless their fellow men.

“ Since the organisation of this Society, in 1848, its example has been followed by the establishment of the British Pomological Society in London, the Société Pomologie de Belge in Brussels, and of other similar organisations located at almost every point of our Union—all working in harmony for the attainment of the most reliable and important results. These are aggregating the experience of the wisest and best cultivators, creating a taste for this useful and divinely-appointed art, proving what varieties are suited to each particular locality, and what to general cultivation. These, through the influence of the Horticultural and Agricultural press, are introducing fruit culture from the Canadas to Mexico,

and from the Atlantic to the Pacific, bringing its numberless enjoyments within the means of the most humble cottager, and multiplying the luxuries which crown the tables of the opulent. The large, luxurious, and abundant fruits in the State of California, in the Territories of the Oregon and Washington, already rival, and in many instances surpass those of our older States, indeed of the countries of Europe.

“ The transactions of our last session have been published generally by the periodical press of the United States. They were also translated and published in some of the languages of Europe; and your catalogue has already become a standard in American Pomology. This it should be your object, at each biennial session, to revise, perfect, and promulgate, as the best means of preventing those numerous impositions and frauds which, we regret to say, have been practised upon our fellow citizens by adventurous speculators or ignorant and unscrupulous vendors, who sometimes use recommendations, hastily and injudiciously given, or surreptitiously obtained, greatly to the injury of the purchaser and fruit-grower, to the dealer and nurseryman, and to the cause of pomology.”

He then proceeded to discuss the question,—can Pears be grown for market at a profit? And in the course of his discussion adduced the following conclusive facts:—

“ The Fruit-Growers' Society of Western New York, composed of gentlemen of deserved integrity and celebrity, some of whom are on this floor, and competent to defend their report, furnish the following instances from that section of the State.

“ Three *White Doyenne* Pear trees, owned by Mr. Phinney, of Canandaigua, one of them small, produce 50 dols. to 60 dols. of fine fruit.

“ A tree of the same variety, owned by Judge Howell, of the same place, seventy years of age, has not failed of a good crop for forty years, averaging, for the last twenty years, twenty bushels annually, and sold on the tree at 60 dols. per year. This tree has produced for the New York market 3,750 dols. worth of Pears.

“ Three large trees, owned by Judge Taylor, of the same kind, yielded, in 1854, eleven barrels, and sold for 137 dols.

“ A young orchard, owned by Mr. Chapin, of four hundred trees, eight years from planting, which produced in 1853 fifteen barrels, selling in New York for 450 dols., and in 1854, fifty barrels, yielding him 1000 dols.

“ Similar results have been realised in the State of Massachusetts.

“ William Bacon, of Roxbury, has about one acre devoted to the Pear. The oldest trees were planted eighteen years since, but more than half within a few years. From two trees—the *Dix* and *Beurré Diel*—he has realised more than one hundred dollars a-year, and for the whole crop, over one thousand dollars a-year.

“ John Gordon, of Brighton, has three and one-fourth acres in his Pear orchard. This was commenced in 1841, there being only eight trees on the ground. There are now 1,200 trees, planted in various years, more than one-half of which since 1854. The amount received for his crop, from that date to the present, has been from five to six hundred dollars a year; but he remarks, ‘If I had confined myself to a judicious selection of varieties, it would now bring me 2000 dols. per year.’

William R. Austin, of Dorchester, treasurer of the Massachusetts Horticultural Society, has an orchard of between 500 and 600 Pear trees, mostly on the Quince root. These trees are about twelve years of age. One hundred are *Louise Bonne de Jersey*. They commenced bearing about three years after planting, and have borne regular crops ever since. They are very healthy, and only eight of the whole number have died since the orchard was commenced. No account of the crops were kept until the year 1851, but Mr. Austin's sales for the next six years amounted to 3,408 dols.

“ The Messrs. Hovey, of Cambridge, have a very large collection of bearing Pear trees. From two rows, 210 trees, grafted on the Quince, the crop has amounted, some years, to 25 barrels.

“ John Henshaw, of Cambridge, planted about an acre of land principally with Pears on the Quince. On the fifth year, he gathered 120 bushels of Pears, 70 bushels of which he sold at 5 to 6 dols. per bushel.

“ A *Buffum* Pear tree, at Worcester, belonging to Mr. Earle, yields annually from 30 to 40 dols. worth of Pears. Mr. Pond, of the same city, planted in 1850 350 *Bartlett* Pear trees, one year old from the bud. In 1857 he sold from these trees 50 bushels of Pears, at 5 dols. per bushel, or 250 dols. for the crop.

“ Similar instances of success, in these and in other States, might be multiplied, if time would permit, to prove the age,

health, and profit of the Pear tree. So deep has the conviction of this truth become, and so uniform the success, that instead of planting trees, as in former times, by the single tree or the dozen, cultivators now plant orchards of hundreds and thousands, in firm and reasonable expectation of large income."

Mr. Wilder dwelt upon the duty of pomologists to supply the people with good fruits at such a price that they might become, not the condiments, but the food of the people.

Mr. Field read a paper by Mr. L. E. Berckmans, advocating the culture of fruit, and especially encouraging faint-hearted fruit-growers to find out what fruits were suited to their locality, and then to cultivate the most vigorous of these. He stated that he had seen more good fruits at one exhibition in Rochester or Boston, than in any twenty exhibitions he had seen in Europe. Let them not be disheartened by any obstacles. None could be greater than the codium in Europe, but that had been overcome.

Mr. Field then read a paper on the adaptation of varieties of Pears to different localities. He had never seen a single universal soil. The finest and most delicate were least general in their adaptation. Not more than half the varieties of Pears were good for any single locality. He had been much interested in tracing out varieties which were brought over by the Huguenots. In conclusion he mentioned instances of successful hybridisation.

The President read a paper from Mr. J. J. Thomas. He says that the roots of his dwarf two-year-old Pear trees cover the diameter of eight feet. The old supposition has been that the roots extend no further than the tops. But the tops of these trees were only two feet in diameter. Peach trees ten feet high were doubled in their growth by heaps of manure fifteen feet distant, and quadrupled by heaps seven feet distant.

Mr. Walker, of Roxbury, spoke in favour of the publication by the Society of a catalogue of all the fruits which have been cultivated in this country. Then he proposed that they should have local catalogues for each State, of good fruits, both for family use and for the market. He would have the catalogue give full descriptions and outlines of these fruits, and would have them completed Jan. 1, 1860. Such catalogues could be sold for fifty cents: he would guarantee a sale of 20,000 a-year.

YELLOW WAGTAIL.

FOR several days past, a small bird, called the Yellow Wagtail, has excited much attention from its continually dashing itself against a window. From morning till night it kept up its attacks at short intervals, during which it appeared to seek its food. This, however, is not the only instance in which this habit has fallen under my observation, as, about this period last year, I shot a bird of the same species after it had exhibited the same peculiarities for many days.

If these circumstances afford sufficient interest to any of your readers, to induce them to offer some observations on the occurrence, I shall feel much obliged. I should remark, perhaps, that it was certainly not in search of insects that these birds attacked the window, as I repeatedly examined the glass, but saw nothing like food to induce them. I, however, venture one suggestion on the subject:—Outside the window, and opposite the lower squares,—the point of attack,—is the ridge of an out-building: from thence they may have seen themselves reflected in the glass, and thereby a pugnacious irritability may have been induced.

On the 5th inst. I reluctantly shot this second visitor, as his constant rappings annoyed the inmates of my residence. Since that time no other individual has ventured upon the dangerous experiment, although there are several flying about the house of your constant reader—Z. A., Dartmouth.

ON TOADS CLIMBING.

ALTHOUGH toads have not sharp claws to assist them to climb, they can get up into clefts and holes in trees, where they sit and snap up insects which happen to enter. Lately I observed one in the cleft of an evergreen oak, about four feet and a half from the ground. On repeated visits, I found it sometimes from home, and at others in the act of ascending, but never descending. When I tried to make the toad go down it seemed very much annoyed, for it uttered a sound like *coo-coo*, and endeavoured to turn to go up again. In fact, I think that toads cannot descend trees like the nuthatch, but make a sort of tumble. They will often slide down smooth surfaces backwards. And, perhaps, when

toads ascend to a considerable height, they are afraid to descend; and this may account for their being found in the hearts of trees after the entrance-holes have grown up. But, as toads are much affected by frost, they would not remain in such situations unless sufficiently protected from the weather.

I may here note, that I am well aware of what has been said respecting toads being found in airtight prisons, even in the heart of stones. I have a faint recollection of an instance of this, which happened when a man was breaking stones near my father's door; and this curious occurrence came under the notice of the late Dr. Munro. But, as no creature can exist long without air, in all such cases there may have been some small fissure which escaped observation after the stones were broken. There is still, however, another difficulty to be explained, which the curious seem to have overlooked. If toads are really imprisoned in such small places, that they can hardly move and have food and air, what becomes of their deposits, which must accumulate?

I pass on, however, to notice the formation of the feet of toads, which enables them to climb. Without going into minute description, I may state that a toad's foot is like the human hand, without a thumb. At the end of each toe there is a sort of ball, and, having great power in their fore legs, they catch hold of the rough bark of trees, and draw themselves up, assisted by the hinder ones. These have five toes on each, and are slightly webbed, to enable them to swim. Boys, indeed, are often frightened, when, on putting their hands into a hole of a tree, they find a toad where they fully expected a bird's nest.—J. WRIGHTON.

PHYLLOTAXY, OR THE ARRANGEMENT OF THE LEAVES ON THE STEM.

AT first sight, nothing would seem to be a less promising subject of study than that of the arrangement of the leaves on the stem, or branches, of the plant, and we should be ready to admit that here, at least, is one field left by Creative Wisdom to the dominion of chance. But a careful investigation of this subject has brought to light a science of unexpected exactness and beauty, called Phyllotaxy, a Greek name, signifying *Leaf-arrangement*.

Let us try an experiment. Select a straight, vigorous shoot of an Elm, with or without leaves. Commencing with the lowest leaf at its point of insertion, or scar, extend a thread to the next leaf above, which we shall find halfway around the stem, then carry the thread on to the next leaf above, which we shall find exactly over our first leaf.

Now, we have wound the thread just once around the stem, passing two leaves. Continue to wind the thread in this way, passing it by each leaf in upward succession, to the top. The thread now forms a regular spiral line; each turn in this spiral passes two leaves—the third leaf begins a new turn, consequently the distance between any two leaves is just half a turn, that is (angularly) half a circle of 180° . Now, let us call each complete turn a cycle, and this kind, viz., the *Elm cycle*, we will express mathematically, the $\frac{1}{2}$ cycle; the numerator, 1, is the number of turns in a cycle; the denominator, 2, of leaves, and the fraction itself is the angular distance between any two leaves, i.e., half a circle or 180° . It will also be observed that the leaves in the Elm-shoot form two perpendicular ranks, or, in other words, are 2-ranked.

Let us next try a shoot from the Birch, in the same way. Here we shall find the spiral arrangement even better defined than in the Elm. Every fourth leaf completes one cycle and begins another; consequently each cycle consists here also of one turn and three leaves, and we will call the *Birch cycle* the $\frac{1}{3}$ cycle. Here we also observe that the leaves are arranged in three rows, or that the Birch, in respect to its leaves, is 3-ranked.

The next experiment may be with the twig of a Peach, or Apple tree. Here, also, our thread when carried from leaf to leaf, always in the same direction, will form a regular spiral around the stem. But a new characteristic here strikes us. The third leaf falls a little short of one complete turn, the fourth goes too far: but arriving at the *sixth*, we find we have exactly completed two turns; that is, the sixth leaf stands exactly over the first. This, the Peach spiral, we therefore express by the number 2-5; 2, the number of turns in a cycle, 5, the number of leaves, and 2-5 the angular distance between any two adjacent leaves. In this case the leaves will be 5-ranked.

Now let us examine these appellative fractions, $\frac{1}{2}$, $\frac{1}{3}$, 2-5, and see how they are related to each other. The sum of the first two

numerators equals the numerator of the third, and the sum of the first two denominators, the denominator of the third. Continuing the series by this rule, that is by adding together the numerators and the denominators of the last two fractions, the next fraction will be $\frac{5}{8}$.

Now, will the next higher spiral with which we shall meet be a $\frac{5}{8}$ spiral? Is this Nature's law? Let us see. We find a long, straight shoot of Osage Orange in yonder hedge. If it be destitute of leaves, no matter, the thorns stand exactly in the same order as the leaves did, for they are *axillary* thorns. Now pass we our thread from thorn to thorn, fastening it by a single loop to each, and another beautiful spiral is before us. Here neither the third, nor the fourth, nor the sixth leaf brings us to the completion of our cycle, but the ninth does! and in order to reach the ninth we have made three complete turns and passed eight leaves! The fraction $\frac{5}{8}$, therefore, is the appellative of this, the Osage Orange-cycle; the angular distance between any two contiguous leaves is also $\frac{5}{8}$ of a circle, or 135° , and the number of perpendicular rows of leaves will be 8, or the plant is 8-ranked.

The next fraction in our series is 5-13, and this also we find verified in nature as the next higher mode of spiral arrangement. The leaves of the Houseleek, or of a young shoot of the White Pine, are thus arranged,—that is to say, the cycle of the Houseleek, &c., consists of 5 turns and thirteen leaves, whose angular distance is 5-13 of 360° .

But the older stems of the White Pine have their leaf-scars arranged after the next higher plan of Phyllotaxy,—viz., 8-21. Hence it would appear that the growth of the stem, after the first year, is accompanied by a spiral movement, in the same direction as its first development. We will now recapitulate these several plans with examples:—

Plan $\frac{1}{2}$: Elm, Linden, or Lime; Indian Corn, Wheat, and all the Grasses.

Plan $\frac{3}{5}$: Alder, Birch, Tulip, Orchis, Carex, and all the Sedges.

Plan 2-5: Apple, Peach, Pear, Cherry, Willow, Poplar, Oak, Hickory, Rose, &c.

Plan $\frac{5}{8}$: Osage Orange, Holly, Flax, Plantain, Aconite.

Plan 5-13: Eyes or buds in the tuber of the Potato, scales of the Pine cone, or leaves, of its annual shoots. Also Erigeron or Flea-bane.

Plan 8-21: Leaf-scars of Pine, leaves of Pitch Pine, Spruce.

To trace out the formative spiral in the simpler plans, like that of the Alder or Peach, is very easy; but to do so in cases of the 5-13 or 8-21 arrangement requires the exercise of much care and skill. The following suggestions will be of use:—Suppose we have the stem of White Pine under trial. The spiral thread here winds *against the sun*. Its turns are rather close,—nearer together than the consecutive leaves are. The line from one scar to the next will vary but little from horizontal, and fall but little short of half a turn (8-21), and, when it is correctly coiled,—except in abnormal cases,—it will include *every* leaf-scar.

The case of opposite leaves presents a new phase of the spiral arrangement. Here two leaves stand opposite each other at the same node or joint. The second pair above never stand exactly over the first part, but over the intervening spaces, and generally over the centre of those spaces, as seen in the Catmint, Boneset, Maple. Two spiral lines, therefore, instead of one, arise, and proceed up the stem together and parallel in such plants. In whorled leaves, like those of Trumpet-weed, where three or more leaves stand around the same node, we have three or more parallel spirals.

Finally, we thus learn that the course of development in the growing plant is universally *spiral*, either evolving a single, double, or triple, &c., spire, prescribing with unerring exactness the position of each leaf, and consequently of each axillary bud, thorn, or branch. "Marvellous are thy works, O Lord of Hosts! in wisdom hast thou made them all!"—and it will be a long time before we shall have comprehended all of His works in the structure of the plant.—*The Cincinnatus*.

ANECDOTE OF THE ROBIN.

A FEW weeks ago an interesting account of the familiarity of the Robin was published, under the above heading, in the pages of THE COTTAGE GARDENER. With your permission, I will relate a similar instance, which has occurred here (Torquay). Mr. Sharland, who is a marble mason, and is nearly eighty years of age, is the occupier of a garden at Ellacombe, where he spends much of his time, amusing himself with the culture of flowers and

fruits. About eighteen months ago he contracted an intimate acquaintance with a hen Robin, which would follow him to every part of the garden; and, when Mr. Sharland took a seat in his arbour, the little favourite would flit about in front, hopping from twig to twig, and alight upon the same bench. By degrees this familiarity increased, and at length the Robin would actually pitch upon the old gentleman's lap, and gather the crumbs, which he never failed to provide for his visitor. Five or six times in the week,—I might say, almost every day,—Mr. Sharland, for the last eighteen months, has regularly visited his garden; immediately on entering which he calls for his "Bob," and "Bob" as regularly appears, with every demonstration of delight. It is worthy of notice, that this Robin mated in the spring; but neither her mate nor any of the members of her young family could be induced to partake of the fare daily provided, which was spread out on the old gentleman's lap, but would flutter about at the entrance, waiting for the dainty morsels to be thrown to them. The Robin does not appear to be intimidated by the presence of another party, as many persons, including myself, have accompanied Mr. Sharland to his garden, and witnessed the above facts for ourselves. As in the first case noticed in your pages, no attempt has ever been made to capture the bird.—J. T. W., Torquay.

ON WASPS' NESTS UNDER WATER.

My attention has been called to Mr. Errington's notice, at page 370, Vol. XX., concerning wasps' nests, "under the water level—in fact, the young grubs over head in water and perfectly healthy." I have found them so myself; but, of course, in such situations they soon perish; and slight knowledge of wasps' nests will convince any one that they must soon decay in water; and, supposing that the grubs could live under it "without air," how could they find food, since they have no affinity to the larvae of insects bred in water,—for instance, to those of *cousin Johns*. These find food where they are hatched, without the least care of the parent insects, while those of wasps are carefully fed; and I need hardly say that the yellow pests cannot dive under water. But the chief difficulty to be explained is, how came these nests to be immersed? Perhaps they belonged to a larger and darker kind of wasps than the common ones, which are fond of building in the banks of rivers, and often make large cavities, to hold their nests, below the usual water level. In autumn, when the rivers increase, the lower combs, which contain the broods of drones and queens, are immersed, and left by the insects to perish. I should here note, that when the broods are found "perfectly healthy" under water, they certainly have not been long there,—probably the nests had dropped down while in the act of being dug out. I have known them do so even from the tread of the foot above, especially after rain, which loosened the props of the paper-like structures.

If Mr. Errington doubts what I have said respecting the difference of wasps, and he examines his nests, perhaps he may find them of the same texture and colour as those of the tree wasp. The nests of both, being exposed to damp, are of sounder texture than that of the common wasp, which, like the hornets' nests, are made of the scrapings of decayed wood. These are fond of dry places for their nests; and I possess one, of the common wasp, which was taken from under the roof of a barn, about the size of a beehive.—J. WIGHTON.

TO CORRESPONDENTS.

BOITE À HOUPE (Miss Gilbert).—It may be had at Messrs. Burgess and Keys, Newgate Street, London.

TRANSPLANTING MACHINE (C. R.).—We suppose you have Mr. M'Glashen's in your memory. It effects the removal of large trees; but the same operation may be performed as effectually by much cheaper modes of operation.

PEARS UNFRUITFUL (J. A. C.).—*Beurré Rose* is *Beurré Bosc*, *Beurré Fortunée* is *Fortunée*. Most likely a good watering would have saved the fruit, and caused the tree to grow. We would advise cutting the roots of the Jargonne directly, and also thinning the shoots, if at all thick. Most likely the *Marie Louise* will bear well next year. Thin out the young shoots not wanted. With such a warm summer, and your best Pear cracking, we fear you will do little good with it in your climate. If you do not like to change or graft it all over with what does suit, try what cutting the roots, and raising them nearer the surface will do.

THE DAMSON (A New Subscriber).—The insect which infested your Damson trees is *Aphis pruni*, an incorrigible pest, not easily got rid of. Many applications have been recommended for destroying it, but we never

knew any that did so effectually. We have been told, on good authority, that Siginia's aphis powder has been perfectly successful, and, should you be troubled with it again, you cannot do better than give that substance a trial.

MOVING FUCHSIAS AND GERANIUMS (A Subscriber).—Your Geranium is *Culford Beauty*; and the Lobelia, *Queen Victoria*, is correctly named also; but the *Enothera* is wrong, the one sent is the *Enothera prostrata*. The beautiful *Enothera speciosa* has a large white flower, and is a very desirable plant to have also. The Fuchsias and Geraniums lifted with care, and potted into larger pots, watered and shaded upon very sunny days, will continue flowering for half the winter, if you have room for them in this way; but, if you have not room for them, you must take them up a little, carefully, remove a few of their larger roots, and repot them into a size larger pots, and reduce the heads of the plants to suit your convenience in your pit or frame. *Ferraria undulata* (not *Tigridia*) is properly a greenhouse bulb. But both this and the Lily may put up all the stronger next year, after so long a rest, if not disturbed.

SEEDS WANTED (J. M. Cox).—You will have some difficulty in getting seeds of the new dwarf *Lobelia speciosa*. You may, from any London seedsman, get plenty of the old long-trailing *Lobelia speciosa*,—properly speaking, perhaps a variety of *Erinus*, but these little things have never been very accurately defined. Best sown in March, and they will get big enough for planting in May. There may be a difficulty, as yet, in getting seeds of the *Ceratium tomentosum*, but plants are cheap and plentiful enough. Mr. Tireback, nurseryman, Luton, had plenty of it lately. We planted a lot of bits last spring, without roots, and they made an edging a foot wide this summer. The reason it is not in the Dictionary is, that at that time it was looked upon as little better than a weed. In the rage for edgings and striking foliage, its hoary leaves brought it into requisition. Its white flowers ought to have given it a place in the Dictionary.

HEATING A PIT (C. P. C.).—A pit thirty-two feet long, and six feet wide, you could keep the frost from, by two iron stoves placed inside, and the funnels either through the glass or through the back wall. If you made a house sixteen feet in length, with the same sashes, and intended for stove plants, you could not manage them with an iron stove inside. But, if that house was devoted to greenhouse or bedding plants, you could do so with care. In either case, a small boiler and pipes would be more certain. Either for pit or house, a small boiler, either saddle-backed or a retort of Thomson's would be better, and easier managed. Sixty feet of three-inch pipe would cost about £3, boiler from two to three, and brickwork, for fitting, extra. Glass labels are not liked. We do not know where the wire-rope can be obtained, unless at Messrs. Newall, Strand, London.

NAMES OF FRUITS (E. D. M.).—*Pears*.—1. Duchesse d'Angoulême. 2. Van Mons Leon le Clerc. 3. Ne Plus Meuris. 4. Winter Nelis. 5. Beurré Diel. 6. Crassanne. 7. Glout Moreau. 8. Catillac. *Apples*.—1. Dumelow's Seedling. 2. Golden Winter Pearmain. 3 and 4. Not known. 5. Hawthornden (?). 6. Not known. 7. Kirke's Admirable. 8. Marmalade Pippin. 9. Beauty of Kent. 10. Manks Codlin. 11, 12, and 13. Not known. 14. Nanny. 15. English Codlin, very fine specimen. 16. Margil. 17. Minchall Crab. 18. Not known. 19. Blenheim Pippin. 20. Kerry Pippin. 21. Keswick Codlin. 22 and 23. Winter Greening (French Crab). 24. Not known. 25. Scarlet Nonpareil. 26. Winter Greening (French Crab). 27. Ord's Apple. (*J. W.*, *Manchester*).—1. Beurré Diel. 2. Louise Bonne de Jersey. 3. Gansel's Bergamot. 4. Beurré Rance. 5. Like Beurré d'Amanlis. 6. Winter Nelis. 7. Passe Colmar. 8 and 9. Not known. 10. Braddick's Nonpareil.

NAMES OF PLANTS (A. E. Persac).—Your plant is *Malva grossulariaefolia*, or Gooseberry-leaved Mallow. It is a hardy, greenhouse plant. (*A. J. E.*).—Nos. 1 and 3. We cannot identify, from your specimens. No. 2. *Chrysanthemum coronarium*, variety New Golden. Specimens should be sent in damped blotting paper in a letter, or in damped moss in a box. (*D. L.*).—Your plant appears to be a species of *Xanthium*, and is, probably, *X. armatum*, sometimes called *X. catharticum*, a native of Quito. But without information as to the habit of the plant, and its history, and an examination of its full-grown fruit, we cannot speak more positively. Any way, as a garden plant, it is worthless; though, if it be the species mentioned above, it may possess medicinal properties.

gratulate themselves that their Exhibition was held in a good substantial stone building, and not in the open air, or in a tent, as is some times the case at agricultural meetings. It is not the first time we have had to speak in terms of admiration of the building in which this is held. It is very lofty, very light, and perfectly free from draught. The birds are shown in single rows of pens, which are open on both sides, and thus a perfect and searching view may be obtained. We have always considered this one of the most comfortable Shows we ever attend, and there was nothing, this year, to alter our opinion,—warm, dry, roomy, and clean. Some of the remarks we had to make last week, on the reluctance of agriculturists to entertain the question of poultry, were here well carried out. The Worcestershire Agricultural Society will not lend a helping hand to poultry. This is short-sighted. Those who are deep in the mysteries of Short-horns, Devons, and Herefords; Downs, Cotswolds, and Leicesters; cannot descend to the Spanish, Cochins, or Hamburgs. “A line must be drawn somewhere.” Golden Globe, Mark's Green, or Snooks' Yellow, may have lots of prizes. Swedes, or Mangolds, may excite admiration, or challenge respect, but one of the most profitable classes in the farmyard cannot be encouraged,—a parcel of cocks and hens! Perhaps when the great benefactors of the science of Agriculture first began the efforts that have been the source of fortune to thousands, they were also met with,—bulls and cows, ewes and rams! “One is as good as another.” The first who grubbed his hedges, or who ploughed twice as deep as his neighbours, was met by being told it never used to be so; and, like Sydney Smith's neighbour, “they wasn't going to be cured of the gripes, for they had had them fourteen years, and put by three hundred pounds every year.” An agricultural committee seems to admit poultry as a child takes physic: it knows it will do good, but it does not like it any the more.

This Show was for chickens only.

The entries for *Spanish* included some of our best names, and the birds were worthy of them. It was, however, evident that it is much easier to breed good cocks than good pullets; and, also, that the former came to perfection much earlier than the latter. Mr. Fowler, who took first, is making himself a great name in this breed. Mr. Rodbard's birds were very good.

The *Dorkings* were large, and, with the exception of one pen, they were in admirable condition. It should be borne in mind, that in this class the weight derived from over feeding is not conducive to success. The *Dorkings* should be showed like the *Game*, in really hard flesh and condition, in fact, like stock-birds. Mr. Wakefield's success kept the first prize in the neighbourhood; but he was very hard run by the Hon. W. Vernon. Mrs. Seaman's birds were deservedly admired. The next class, the new one for *Silver Grey Dorkings*, afforded an easy triumph for Mr. Vernon. We have seldom seen a pen so true to colour, and their condition reflected the highest credit on their feeder. The *White Dorkings* were very good, but not numerous.

At every exhibition we have to eulogise the *Game* classes, and we do it here. They are fast attaining perfection, and they increase daily in popularity. Mr. Vernon took first prize, and Mr. Moss the second. The latter was an undubbed pen. In chicken summer shows it is not necessary the birds should be dubbed; but exhibitors must not deceive themselves. At winter shows, undubbed birds would be disqualified. It was very hard to be able to give only high commendations to such birds as those shown by Messrs. Horton and France. Mr. Vernon took three out of the four prizes in the remaining classes for *Game*. The beauty of his birds, and their high condition, easily achieved and richly deserved this unusual success.

The *Cochins* were admirably represented, except—marvel of marvels!—that at their own home, under the wing of our old friend, Mrs. Herbert, the Whites were not good. The Buffs and Grouse, however, made amends; and it is unusual for the Grouse to equal the Buffs in number, as they did here; but they did so in this instance, not only in numbers but in quality. Grouse Cochins are in a fair way to equal the celebrated birds shown by Mr. Punchard some years since.

Brahma Pootras formed an excellent class, and every prize-taker deserved his honours. “I did not send my birds,” said an old and successful exhibitor to us; “the entrance-money is the same as for other classes, and the prizes are smaller. When they give as much for *Brahmas*, as for *Spanish* and *Dorkings*, I will send.” “Bathing,” said a respectable, middle-aged lady, “is, no doubt, healthy, but my boys shall never bathe till they can swim.” Classes, good exhibitor, must have prizes according to entries, and while you and others abstain from entering your birds, you

THE POULTRY CHRONICLE.

POULTRY SHOWS.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

N.B.—Secretaries will oblige us by sending early copies of their lists.

WORCESTER POULTRY SHOW.

THERE are certain superstitions connected with certain events. A wedding rejoices in sunshine; and some people are pleased that it rains at particular times. We doubt, however, whether the able Committee of this Show were of that opinion, for the first day was ushered in by heavy showers. They had reason to con-

tie the hands of the Committee. They cannot give large prizes when there are small entries. Mr. Fowler and Mr. Pullen gained easy victories.

Golden-pencilled *Hamburgs* are improving daily. The prize birds were highly meritorious, especially one pullet, in Mr. Williams' pen. It would be a relief if Mr. Archer were well beaten in Silver Hamburgs. It is *toujours perdrix*, and we therefore say he took all the prizes. Success palls on a man, and he has taken up the Silver-spangled. He here took second prize; but Mrs. Pettat held her own, and took first. In Golden *Polands* this lady easily took both. These reports are worth nothing, if they do not convey somewhat of instruction; and those who observe the prize-list may see, that, with painstaking, success is almost hereditary. Mrs. Pettat, with the produce of her prize-birds of 1857, took both prizes in 1858.

We have everywhere to record the improvement in the Silver *Polands*, and here they were really beautiful. Already our report has trespassed on our space; but we refer our readers to the prize list, and may remark, that it will be seen that the Judges were chary of commendations, and avoided any eulogistic mention of classes, as they found almost everyone would deserve it; and they were tired of "capital," "excellent," "most meritorious," "improving," &c. The *Polands* with white crests were very good, and there is an evident increase in the size of the topknots; but there is also more black in the front, and that of the cocks has become larger, at the expense of quality. Formerly it was firm and strong, but now it falls around without form or symmetry. We should not be justified in being thus, what some may call severe, did we not see what has been accomplished in other classes. We are fast coming to the opinion that nothing is impossible in poultry.

Bantams are an improving class, if we except the Silver *Sebrights*. They are "missing." The Rev. G. F. Hodson, and Mr. H. D. Bayley, took for *Sebrights*; and even the Hon. W. Vernon was for once obliged to be second in Blacks. As usual, the Game were beautiful.

The *Turkey Poulets* were unusually good.

The first prize Aylesbury *Ducks* weighed 22½ lbs., the second 22lbs.

The first prize *Geese* weighed 50½ lbs., and the second, after travelling from Scotland, weighed 46 lbs.

Rouen *Ducklings* were very good, but they were not heavy.

The Various Class of *Ducks* showed perfect specimens of every breed.

The sweepstakes for *Cocks* concluded the classes. In *Game*, Mr. Archer's bird was too fat. The *Dorkings* were perfect.

We must refer, for all further information, to the prize list, as we have already exceeded our limits. We are happy to bear our testimony, for the second time, to the merits of Mr. Griffith, as an able and zealous secretary.

The Rev. Mr. Pulleine and Mr. Baily were the Judges.

BELGIAN CANARIES.

AT the present time considerable excitement and discussion exists amongst breeders of Canaries, especially relative to the Belgian species, owing to the forthcoming Show at the Crystal Palace. The classifying of the different classes does infinite credit to the superintendent, be that gentleman whom he may, and shows some considerable experience relative to the different species; but the test of the birds will be the Exhibition, and it will require a very experienced and competent person to judge, —one who has had practical knowledge of the real quality of the pure Belgian; for this species will eventually take the place of every other, and persons will be compelled to have recourse to such breeders as have made it their study indefatigably to keep up the pure breed, if they would vie or outstrip others. For what is the breeder without emulation?

Sometime ago, Mr. Moore, of Fareham, who is a considerable breeder of the pure Belgian Canary, gave his opinion in your valuable journal, founded on experience, as to the qualities of that species, and the following points are, he considers, essential for a bird to be up to the mark:—

"1st. Head small and flat. 2nd. High shoulders. 3rd. Narrow across the shoulders, standing out at the back. 4th. Round in the back and bow-shaped. 5th. Long in the leg. 6th. Show the thigh well. 7th. Strip themselves well up. 8th. To have a narrow tail, to be shut up as one feather. 9th. To have a small frill just at the chest. 10th. Not to be under six inches."

Now, birds with such points, many breeders say, are very rare. This I acknowledge; but, nevertheless, they are to be seen in the possession of the above-named gentleman (the pure Belgian breed); and had he named another point, which he has in perfection, I think he would have been justified,—namely, colour; for colour like an orange, in my opinion, is a great point gained in birds.

I have been myself a breeder for many years, and can boast of having some good birds, but not up to all the ten points; though I hope, ere long, to arrive at the desideratum. I am not in despair, though I have tried many years; but I am encouraged every season, for my stock still improves, and points are gained every breeding. I have long tried for length, and obtained it; but I find, when I have that, I fail in another, viz., the 8th point; and I firmly believe this will be invariably the case. The points named will be the criterion at the Show, I have no doubt; and those who have an opportunity will do well to be present at the Exhibition: it will give them an ocular demonstration of some rare specimens.—GEO. COLLINS, *Richmond Place, Portsea*.

CREWE POULTRY EXHIBITION.

This Exhibition was held Wednesday and Thursday, October 13th and 14th, for birds hatched in 1858, except in the case of Pigeons, and where otherwise stated. The following is the prize list:—

SPANISH.—First, J. K. Fowler, Prebendal Farm, Aylesbury. Second, J. Rodbard, Langford, Somerset. Highly Commended, Capt. W. Hornby, R.N., Prescott; — Hobson, Odd Rode, Cheshire. Commended, T. Davies, Wavertree. (A good class.)

DORKINGS (Coloured, except Silver Grey).—First, Capt. W. Hornby, R.N., Prescott. Second, Lady Bagot, Bletchfield Hall, Staffordshire. Highly Commended, J. Price, Londonderry, Yorkshire.

DOKINGS (Silver Grey).—First, J. B. Chune, Coalbrookdale. Second, — Dolby, Syston, Grantham, Yorkshire. Highly Commended, J. Robinson, Vale House, Garstang; H. W. P. Berwick, Helmsley, Yorkshire.

GAME (Black-breasted and other Reds).—First, J. Parton, Nantwich. Second, E. Bowers, Nantwich. Highly Commended, G. W. Moss, Liverpool; W. Galley, Nantwich. Commended, G. W. Moss, Liverpool; J. Fletcher, Kersley, Lancashire. (This class excellent.)

GAME (Duckwings and other Greys and Blues).—First, G. W. Moss, Liverpool. Second, W. Chatting, Wandsworth, Surrey.

GAME (any other variety).—First, E. Bebbington, Minshull Vernon, Cheshire. Second, J. B. Chune, Coalbrookdale. Highly Commended, — Dawson, Selby Oak, near Birmingham.

COCHIN CHINA (Cinnamon and Buff).—First, W. Dawson, Mirfield, Yorkshire. Second, H. James, Walsall. Highly Commended, T. Stretch, Marsh Lane, Bootle. Commended, J. Price, Londonderry, Yorkshire.

COCHIN-CHINA (Partridge and Grouse).—First, Miss V. W. Musgrave, West Bank, Aughton, Liverpool. Second, J. K. Fowler, Prebendal, Farm, Aylesbury. Highly Commended, T. Stretch, Marsh Lane, Bootle.

COCHIN-CHINA (any other variety).—First and Second, G. Lamb, Compton, near Wolverhampton. Commended, W. Dawson, Mirfield, Yorkshire.

BRAHMA POOTRA.—First, J. Fowler, Prebendal Farm, Aylesbury. Second, G. Botham, Wexham, Court, Bucks. (An excellent class.)

HAMBURGS (Gold-pencilled).—First, W. Pierce, Northwich. Second, J. Martin, Worcester. Highly Commended, E. L. Williams, Northwich. Commended, J. Martin, Worcester; J. Fletcher, Kersley, Lancashire, C. R. Titterton, Birmingham. (A superior class.)

HAMBURGS (Silver-pencilled).—First and Second, E. Archer, Malvern. Highly Commended, W. Pierce, Northwich. Commended, J. B. Chune, Coalbrookdale.

HAMBURGS (Gold-spangled).—First, J. B. Chune, Coalbrookdale. Second, N. Marlow, Denton, near Manchester. Highly Commended, W. R. Lane, Edgbaston, Birmingham. (This class very good.)

HAMBURGS (Silver-spangled).—First, W. Pierce, Northwich. Second, T. Dale, Middlewich. Highly Commended, W. Chester, Harwich. Commended, E. Archer, Malvern.

POLAND (Silver).—First, J. Moss, gardener, Horley House, Lymm. (No competition for Second prize.)

POLANDS (Black with White Crests).—First, G. Ray, Ivy Cottage, Minehead, Lyndhurst. Second, Mrs. A. Blay, Worcester.

ANY DISTINCT VARIETY NOT INCLUDED IN THE ABOVE CLASSES.—First, A. F. Watkin, Staffield (Sultans). Second, J. Thomas, Macclesfield. Highly Commended, W. Dawson, Mirfield, Yorkshire (Silky Fowl). Commended, Mrs. A. Blay, Worcester (White). (A praiseworthy class.)

BANTAMS (Gold and Silver-laced).—First, T. H. D. Bayley, Ickwell House, Biggleswade, Beds. Second, H. Tomlinson, Birmingham.

BANTAMS (Black or White).—First, H. Hague, Haughton Green, Lancashire. Second, T. H. D. Bayley, Ickwell House, Biggleswade, Beds.

BANTAMS (Game).—First, T. Burgess, jun., Burley Dam, Cheshire. Second, T. H. D. Bayley, Ickwell House, Biggleswade, Beds.

TURKEY POULTS.—First, W. Dolby, Syston Grantham, Yorkshire. Second, Capt. W. Hornby, R.N., Prescott.

GOSLINGS.—First, T. Burgess, jun., Burley Dam, Cheshire. Second, Capt. W. Hornby, R.N., Prescott.

DUCKLINGS (Aylesbury).—First, J. K. Fowler, Prebendal Farm, Aylesbury. Second, M. Greenwood, Burnley. Highly Commended, Mrs. C. H. Colemans, near Bolton-le-Moors; J. Price, Londonderry, Yorkshire. (The whole class good.)

DUCKLINGS (Rouen).—First, M. Greenwood, Burnley. Second, J. Price, Londonderry, Yorkshire. Highly Commended, T. Burgess, jun., Burley Dam, Cheshire.

DUCKLINGS (any other variety).—First and Second, Miss S. Perkins, Sutton Colefield (Buenos Ayres and Decoy Ducks). Highly Commended, J. K. Fowler, Prebendal Farm, Aylesbury (East Indian); J. B. Chunne, Coalbrookdale; H. Churchill, Gloucester (Buenos Ayres). (The Buenos Ayrean Ducks very good.)

CLASSES FOR SINGLE COCKS.

COCHIN-CHINA.—First, H. Tomlinson, Birmingham. Second, H. Churchill, Gloucester. Highly Commended, T. Stretch, Marsh Lane, Bootle.

HAMBURGH.—First, E. Archer, Malvern. Second, J. Martin, Worcester. Highly Commended, W. Pierce, Northwich; W. R. Lane, Edgbaston, Birmingham. (The class excellent.)

SWEETSTAKES.

GAME COCK CLASS.—First, E. Archer, Malvern. Second, F. Worrall, Liverpool. Third, E. Bowers, Nantwich.

PIGEONS.

CARRIERS.—First, J. Percival, Harbourne, Birmingham. Second, H. Holdsworth, Halifax. Highly Commended, H. Holdsworth, Halifax.

ALMOND TUMBLERS.—First, R. Chase, Moseley Road, near Birmingham. Second, J. T. Lawrence, Liverpool. Commended, H. Holdsworth, Halifax.

BALDS.—First, J. Percival, Harbourne, Birmingham. Second, J. W. Edge, Birmingham. Commended, J. Percival, Walworth, Surrey.

BEARDS.—First, J. W. Edge, Birmingham. Second, J. Choyce, jun., Harris Bridge, Atherstone. Highly Commended, J. E. Mapplebeck, Moseley Road, Birmingham. Commended, H. Child, jun., Birmingham.

JACOBINS.—First, H. Child, jun., Birmingham. Second, J. T. Lawrence, Liverpool. Highly Commended, W. Thursby, Crewe.

FANTAIS.—First, J. Choice, jun., Harris Bridge, Atherstone. Second, G. W. Boothby, Louth. Highly Commended, J. T. Lawrence, Liverpool; G. Goore, Liverpool.

TRUMPETERS.—First, H. Holdsworth, Halifax. Second, H. Child, jun., Birmingham. Highly Commended, J. Firth, Halifax; G. Goore, Liverpool; J. E. Mapplebeck, Moseley Road, Birmingham.

POWTERS.—First, H. Child, jun., Birmingham. Second, W. B. Akers, Halifax. Highly Commended, H. Holdsworth, Halifax; J. Choyce, jun., Harris Bridge, Atherstone.

MOTTLED TUMBLERS.—First, H. Child, jun., Birmingham. Second, J. Edge, Birmingham. Highly Commended, J. Percival, Walworth, Surrey; —Percival, Harbourne, Birmingham.

OWLS.—First, H. Child, jun., Birmingham. Second, J. T. Lawrence, Liverpool. Highly Commended, H. Child, jun., Birmingham; Miss E. S. Killingsby, Burton-on-Trent; Miss E. Pears, Birmingham. Commended, G. Goore, Liverpool; Miss E. Pears, Birmingham.

NUNS.—First, J. W. Edge, Birmingham. Second, H. Child, jun., Birmingham. Commended, J. Peake, Shavington, Cheshire.

TURBITS.—First, —Edge, Birmingham. Second, H. Child, Birmingham.

ARCHANGELS.—First, H. Child, jun., Birmingham. Second, J. Firth, Halifax.

BARBS.—First, J. T. Lawrence, Liverpool. Second, J. Percival, Harbourne, Birmingham. Commended, H. Child, jun., Birmingham.

RUNTS.—First and Second, H. Child, jun., Birmingham. Highly Commended, J. Firth, Halifax; G. Goore, Liverpool.

DRAGOONS.—First, H. Hague, Haughton Green, Lancashire. Second, —Mapplebeck, Moseley Road, Birmingham. Highly Commended, E. Bebbington, Minshull Vernon; Miss E. Killingsby, Burton-on-Trent. Commended, H. Child, jun., Birmingham.

ANOTHER DISTINCT VARIETY NOT MENTIONED IN THE FOREGOING.—First, G. W. Boothby, Louth (Victorians). Second, —Lane, Edgbaston, Highly Commended, H. Child, jun., Birmingham; W. B. Ackers, Halifax (Swallow); J. Percival, Harbourne, Birmingham (Yellow Magpies).

BEWARE!

I INTENDED giving publicity to a letter I received a few weeks ago; but it quite escaped my memory till I saw an article in your **POULTRY CHRONICLE** of last week, headed "Caution to poultry-keepers." I find I have received a letter from the same party, and have since learned that many have been duped, no doubt by the same gang. On the 31st of August I received the following note:—

" Wholesale Toy-belt Manufacturer, Manchester.

" 8 Mo., 30, 1858.

" Respected Frend,—Please say if thou has any *Bantams Fowls* to dispose of, and thy lowest cash price for them,

" Thine truly,

" JOHN THOMPSON.

" 7, Cross Street, Swan Street, Manchester."

I answered the above, requesting a remittance, on receipt of which the birds should be forwarded. But I have as yet had no reply from "John Thompson." It does not answer his purpose to pay cash,—he requires long credit.

Poultry-fanciers cannot be too cautious of this "wolf in sheep's clothing;" and not poultry-fanciers only, but exhibitors of cattle. I understand that this man has tried to obtain pigs and cattle in the same way. No doubt, Manchester will soon be too hot for our respected friend, and he will have to move his

quarters, most likely into some other Cross Street, or back street, of a neighbouring town. If you wish to keep out of his clutches, take my advice,—write for a remittance, and he will give you no further trouble.—J. THORNTON, Heckmondwike, near Leeds.

VARIANCE IN HATCHING SEASONS.

THE following is a table of the produce of eggs hatched at home under the most favourable circumstances:—

1855, from 105 eggs, 94 chickens were hatched.
1856 " 86 " 69 "
1857 " 141 " 109 "
1858 " 169 " 94 "

That is to say, upon an average, in 1855, from a dozen eggs, more than ten chickens were obtained. In 1856 and 1857, from every dozen eggs, more than nine chickens were obtained; whilst, in the season of 1858, a dozen eggs have yielded little more than six chickens.

As the stock and brooding hens (Cochins) have been all the time under the same management, and as there has been at least as much pains and experience exerted in 1858 as in previous years, I think the foregoing statement goes far to prove that the present has been an unusually unfavourable season for poultry, and that those who have purchased eggs, and have got but few chickens, have, after all, not much worse fortune than their neighbours.

Why this spring should be unfavourable I cannot say. There must, however, have been some cause at work more than is common in ordinary seasons, for the complaints of ill-doing seem to be almost universal.—G. G.

OUR LETTER BOX.

VARIOUS.—1. Is it common for pullets to lose weight after laying some time, or would any other cause occasion it, while seeming to be in good health? 2. In Cochins, is not the bright yellow of the legs dependent on a grass run? Will they not lose it, if away from grass? Will they regain it, if turned out? 3. Are young birds more likely to breed chickens with good-coloured legs, and old ones to breed pale legs (I speak, of course, of the best strains)? 4. Will a cross of Hamburgh and Cochin fowls produce good setters or layers, or large-sized birds? I have bred some this year which I should not know from large Hamburghs, except by a slight feathering of the leg.”—A. S. B.

The time when hens or pullets are heaviest is immediately before laying, and, without losing condition, or falling off in health, they get gradually thinner as they lay their eggs,—not only becoming thinner, but losing weight. It admits of a natural solution—high condition is necessary to produce the eggs, and to bear the strain on the system. Then come sitting and rearing the brood, and then the sickly time of moulting. Afterwards the plumage is hard, and then the condition of the birds improves till it again attains its maximum before laying. We do not think the yellow of Cochin's legs has anything to do with grass run. No birds care so little for it, or need it less; where they have it they do not use it, and a good-sized sod of growing grass, thrown into their pens daily, is all they require. Old birds are as likely to breed good-coloured legs as young ones. The truth is, the beautifully bright yellow legs seen in chickens belong only to that age; adults lose the freshness as they get older, and they at last become pale, almost flesh-colour. The cross between Hamburghs and Cochins appears to us a mistake. The Hamburghs cannot give size,—they cannot improve the laying of the Cochins,—and it is certain they will not make them better sitters. It is common, when two breeds are crossed, for part of the produce to appear in the plumage of one breed with the size of the other; and many are, to all appearances, pure, giving no visible indication of a strain.]

DECEMBER SHOWS (Jacob Beeby).—We know of no other Show in that month, than is mentioned in our list.

REDWING-BAR PIGEONS (G. B.).—Redwing-bars do not belong to silver-coloured Pigeons. Your Owls are, probably, mealy or strawberry, which are sometimes mistaken for that colour. Silver has, however, no shade of red in it whatever; it is a very light bluish grey, or silver grey. The nearest example I can think of, is the colour of a shilling when it has lost its new gloss, but before it is much tarnished. The wing bars of silver Pigeons are sooty black: flight and tail have a chocolate shade. Mealy is a very inferior colour, and generally discarded by Pigeon-fanciers. It is produced from a mixture of red and blue, red and silver, or red and grizzled.—B. P. BRENT.

LONDON MARKETS.—OCTOBER 18TH.

POULTRY.

The trifling advance we noted last week has not been sustained. The great quantity of game and the warm weather interfere with the sale of poultry. The supply of it has also been greater.

	Each.		Each.
Large Fowls	4s. 0d. to 4s. 6d.	Hares	2s. 3d. to 2s. 6d.
Small ditto.....	3 0 " 3 6	Partridges	0 3 " 0 10
Chickens.....	1 9 " 2 3	Grouse	2 8 " 2 6
Geese	5 0 " 6 6	Pigeons	0 6 " 0 7
Ducks	2 6 " 2 9	Rabbits	1 3 " 1 4
Pheasants	2 6 " 2 9	Wild ditto.....	0 8 " 0 9

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	OCT. 26—NOV. 1, 1858.	WEATHER NEAR LONDON IN 1857.							Clock afterSun	Day of Year.	
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.		
26	TU	Erica exsurgens major	29.833—29.753	63—38	S.E.	—	45 af 6	41 af 4	50 af 6	19	15 55	299
27	W	Erica exsurgens grandiflora.	29.066—29.721	64—38	S.E.	—	47 6	42 4	5 8	20	16 1	300
28	TU	ST. SIMON AND ST. JUDE.	30.011—29.962	61—34	S.W.	.02	48 6	40 4	32 9	21	16 6	301
29	F	Erica vestita coccinea.	29.939—29.843	60—38	S.W.	.04	50 6	38 4	0 11	G	16 10	302
30	S	Erica sulphurea.	30.015—29.664	58—27	S.W.	.12	52 6	36 4	morn	23	16 13	303
31	SUN	22 SUNDAY AFTER TRINITY.	30.111—30.028	60—31	S.W.	—	54 6	34 4	25 0	24	16 16	304
1	M	ALL SAINTS.	29.962—29.715	59—36	S.E.	.01	56 6	32 4	47 1	25	16 18	305

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 54.4° and 37.7°, respectively. The greatest heat, 67°, occurred on the 30th, in 1854; and the lowest cold, 23°, on the 30th, in 1856. During the period 101 days were fine, and on 116 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

THE necessity for the examination of all drains and watercourses will be readily suggested by the now frequent recurrence of wet weather.

BROAD BEANS.—Plant a few *Mazagans*, in soil favourable for vegetation in winter, either where they are to remain, or on a sheltered border, for transplanting early in the spring.

BROCCOLI.—Dig up, to economise space, and lay them in by the heels close together, to save them from destruction by frost. Whether the frost be severe or not, it is a safe plan to lay them down; and if their heads point to the north, they escape better than when exposed to the mid-day sun in winter.

CABBAGES.—Fill up vacancies in the main plantations.

CARROTS.—Take up the whole of the principal crops, and allow them to get thoroughly dry before they are stored away in sand. Any that are broken, or cut, to be put aside for present use, as they would decay in the heap and spread infection to the rest.

CAULIFLOWERS.—Remove the dead leaves from the plants in the frames and under handlights, and fill up vacancies, if any occur. Give air freely every fine day.

CELERY.—Continue to earth-up all that require it. If severe frost sets in, protect the most forward crops with a covering of long litter.

CHIVES.—Take up, and replant every two or three years.

ENDIVE.—Tie up, when quite dry, a quantity for blanching. To be protected in pits, or frames, when severe weather sets in.

ONIONS.—Hand-weed the autumn sowing, and hoe the ground slightly about them.

POTATOES.—If laid in heaps, to be frequently turned over. Some, when fresh dug, or when buried in pits, eat strong and watery, that would be dry, mealy, and finely flavoured, if some of their moisture was allowed to evaporate freely. Hence the advantage of storing them in a dry place, where neither wet nor frost can reach them.

SHALLOTS and GARLIC.—Plant in light and dry soils; but if heavy and wet postpone it till February.

FRUIT GARDEN.

FRUIT TREES.—Planting them either in the open quarters, or against walls, may be commenced at once. Rich and deep borders are unfavourable for the production of a fruitful habit, and, therefore, should be avoided. As a general rule, if the borders are not naturally of a mellow, fertile soil, some fresh loam, or other good soil, from a common, or field, applied, and worked in along the borders, will prove very beneficial; but, if a sufficient quantity cannot be conveniently obtained for the whole, two or three wheelbarrows full, together with some rotten leaves, or leaf mould, may be put in each place where the trees are to be planted.

FLOWER GARDEN.

The approach of winter demands attention here, as well in defending tender plants against its rigour, as in

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planting the bulbs and tubers, and dividing herbaceous plants, before hard frost suspends all out-of-door operations. The display of next spring and summer will depend, in a great measure, upon what has already been done, or is being done at this season.

CARNATIONS and PICOTEES.—Layers, that have been delayed in consequence of not being rooted at the proper season, should now be examined, and, if only slightly rooted, may be potted with safety. Those that have no roots at the present time are better taken off the stools, and planted under handglasses, similar to pipings; they only require a very moderate supply of water.

EARLY SPRING FLOWERS.—Plant *Anemones*, *Crocuses*, *Jonquills*, *Snowdrops*, *Primroses*, *Narcissi*, *Hepaticas*, *Violets*, *Polyanthuses*, *Wallflowers*, &c., in the beds and borders. When disposing of these for early spring do not forget the later varieties, equally as welcome in their turn,—such as *Rockets*, *Sweet Williams*, *Canterbury Bells*, *Foxgloves*, *Geum coccineum*, *Phloxes*, *Delphiniums*, *Antirrhinums*, *Campanula carpatica*, *Verbena venosa*, &c.

LILACS.—Remove suckers, to give strength to the tree, to produce fine, bold flowers.

PANSIES.—Divide and plant out, for next summer's bloom, in beds of richly-prepared soil, seedlings of good quality. To be potted and preserved in a frame, to ensure them as much as possible from the risk of loss in winter.

PITS and FRAMES.—Harden off *Verbenas* and other massing plants; stop all those making growth; water as little as possible; and take advantage of every opportunity of fine weather to give abundance of air. As a cheap protecting material is of importance to the gardening world, we would direct attention to the exhibition of inventions that took place in March last, in the rooms of the Society of Arts, Adelphi, London. Amongst them was Dr. Guyot's patent straw-weaving loom. This machine has the power of binding loose straw into a rude kind of matting, which is extremely valuable for temporary thatching, covering a brick, or raising a hasty fence; and, no doubt, would be most invaluable for many garden purposes.

SHRUBS.—Wherever alterations are intended, no time should be lost, as the weather is now mild and damp, and most favourable for transplanting deciduous and evergreen trees and shrubs.

WILLIAM KEANE.

KEEPING SCARLET GERANIUMS IN WINTER.

THE comet of 1811 left us much about the same time as the one which has just gone, and the winter of 1811-12 was a very long one, but not so very hard as we often have it. There were many days and nights in January, 1812, as bad as the night that Tam O'Shanter and Souter Johnny boosed, so that their celebrity has gone to the ends of the earth; and the spirits which revelled in the auld Kirk that night were, in the Highlands, believed to have been so disappointed, at not being able to set the world on fire with the tail of the comet, that they made that winter on purpose, in order to kill "stock, stave, and

feather," all over the Highlands. The 12th of January that winter, I think, was on a Sunday, a memorable day in our family. I received my first Bible that day, and on the morrow I was promoted to the Bible class; and I had strict orders to bring home my Bible from school every night for the rest of the winter, in order to save man and beast from the fury of the spirits of the air. I did bring the Bible home every night, and we all got over the winter at last, about Beaufort Castle, with less harm from wind and weather than was in the recollection of my grandmother, who was the oldest woman in Scotland.

Now, if we are to have such a long winter as that, after this comet, what book will save *our stock* from the mysterious powers, and who will read it to the nation? There is no book, that I know of, which is half so good for keeping bedding Geraniums as **THE COTTAGE GARDENER**. But everyone should read it for himself, beginning with the index of the first volume, and going through every volume till this time last year; and always recollecting, that what is a good method for saving them, under certain conditions, may be the worst plan under other difficulties. There is not a plan for keeping Scarlet Geraniums, in our pages, which is not sure enough somewhere; and there is nothing new on the subject.

My own last experiment upon them was tried in the beginning of last November. I took twelve plants without a cut or a bruise about them. They were taken up most carefully, three weeks before then: not a root was strained, nor a morsel of the bark hurt; but all the leaves were taken off with the greatest care, by drawing them backwards and downwards, till they snapped at the joint hinge, which is always the safest way before winter. To cut them off with a knife is not so good, as the very bottom of the footstalk cannot be reached: that little portion dies back, and the slightest touch of damp will reach it first; then the stem is soon affected, and away it goes. To pull off leaves with a jerk is as bad as pulling up the plants from the bed. If you could see the extraordinary delicacy of the organs which run from the roots into the body, or substance, of a plant, you would shudder at the idea of pulling it. Oaks, Elms, and other trees, which are equally strong and hardy, have been killed by the score, by the mere act of putting too much strain on the roots by pulling them. And the worst of it is, that death from pulling is so lingering, that the cause of death is forgotten before the plant is half gone. Some plants take one, two, and even three years, to die from strains.

Those enormous Cactuses they had at Kew Gardens, from Mexico, some years since, died, one after the other, from this very cause; and the last that went was three years from the time the awful pulling took place in Mexico. I had a large experience that way once; and, more than twenty years back, I wrote as much against that practice as would fill a number of **THE COTTAGE GARDENER**. Since then, I have known a clever young gardener, who, when he went to his first situation, took up all his Geraniums, the first autumn, by pulling "to save time;" and he did save time, most assuredly, for he lost ten thousand plants, and he had the rest of the time saved to devise means to replace them. He is alive to this day, nevertheless; and he reads **THE COTTAGE GARDENER** every week, which will make his hair stand on end when he reads this.

But, as I was going to say, after preparing these Geraniums with the greatest care, they were gradually dried out in the sun and air all day, and brought indoors to avoid the damp at night. I had them buried just one foot deep in the centre of the garden, where they had no advantage from the situation, farther than that no water could stand round them, or near them. There was nothing extra put about them,—merely the bare earth,—and they laid there till the first week in May, when nine of them, or seventy-five per cent., were quite rotten; one was a little blotchy in the back of the young shoots, and

two of them were just as sound as the day they were put in. The three were planted out alike, and grew well enough. The very small roots suffered more than the most tender part at the top of the young wood, which was in full growth when the plants were lifted. Therefore, it will not pay to bury Geraniums without some method to secure them from the natural dampness of the common soil; but the experiment is encouraging, and I shall repeat it, with variations, this winter.

Three winters back I buried a lot of odd plants, without careful preparation, in the cellar, in very dry, dusty earth. They were cut plants. All the young growth of the previous season was cut off. The heat of the cellar was very uniform all that winter,—very little over or under 48° of the scale. This was worse than the damp or frost. The plants began growing, and nothing that I could do would check them there; and in less than two months most of them were so exhausted, that death ensued. There were sixty of them, and in April there were only seven or eight with any signs of life near the roots; but none of them ever pushed a bud. The cellar is so dry, that I should not fear to sleep in it; yet I cannot keep a Geranium in it more than three weeks at a time; and at the end of that period it is in active growth, even if put in at the dullest time of the winter. Here, then, is another turn of the cellar question, which proves the necessity of perfect rest from growth to be essential for keeping these plants safely in winter, if they are out of pots or boxes. If I had had them hung up in that cellar it would have been all the same,—they would grow; and growth in the dark, and with little change of air, seems particularly injurious to Scarlet Geraniums.

I made a dozen experiments in that cellar for the last seven years, and I am satisfied that Geraniums cannot be kept anyhow in a cellar, which is not cool enough to arrest growth most completely. A few degrees of frost would not hurt old plants, which were perfectly dry, in a cool cellar. But I have no means of ascertaining the highest degree of heat at which these plants would keep dormant: probably any heat over 40° would stir them if it was continuous; but, if the heat was only by fits and starts, and could be lowered at pleasure, it is more likely than not, that 50° would not move them for a week or so at a time. Depend upon it, however, nothing is so good for them as to be very cool,—down to the verge of freezing, provided they and everything about them are perfectly dry,—that is the grand secret after all; but the most important is, to know when they are dry enough without suffering from too much dryness. They can dry hay till all the goodness is out of it; but to make good hay of Geraniums, as it were, where the sun never shines, is a very different thing indeed,—it is just one of the turning points of success and failure among amateurs. But amateurs know ten times more than some of the best gardeners on this subject. All the advantage that we have over them is, that most of us can tell what is the matter with them at the first glance, and, knowing that, we can the more readily supply the proper remedy.

There is no place more safe for keeping Geraniums than a cool, dry cellar, where they would keep the whole winter, if they were tied in bundles and hung up round the walls. But there is not one out of 500 cellars where that could be done: yet a considerable degree of damp may be got over in a cellar, by placing the plants in dry sand, or earth, or anything dry, to save them from the damp. An iron chest, packed with Geraniums and bran, as Mr. Kidd packs his Grapes and Tomatoes, would, probably, keep Geraniums safe enough for a winter, just in the bed of the Thames; and, if so, surely there are means of keeping them in a damp cellar.

To return to the open air. If the soil in my garden was between wet and dry, or if it was quite dry, the plants would have kept, last winter, just like pitted Potatoes. One of our correspondents speaks to-day of keeping Geraniums buried in a cold pit,—an odd and expensive

way, certainly, when they would be just as safe under a Birch or Fir tree; but the author of that plan talks of pulling them up, which shows plainly enough that he stuffs a gosling for a Michaelmas goose, and that he knows very little on the subject, but writes at random recollections from reading gardening books, which are just as full of fiction and fable as any other branch of literature, and require a practical knowledge to make out what is right from what is erroneous. That is just where the readers of *THE COTTAGE GARDENER* have the advantage over such as merely read such stuff as pulling up Geraniums to keep them over the winter! Still, what is good for trade should not be nightcapped in our country; but, if everyone pulled up all the Geraniums three years running, and lost them after all, people would get so tired of them, that the trade would suffer in that branch as much as the Geraniums themselves. Take them up as carefully as you would take down Pears and Peaches, make them hay fashion, fit for the burial, and you may be your own undertaker with confidence, provided the grave is dry, and is not likely to be wet, or damp, all the winter; then, if you can afford it, place a glass-case over the place, and, depend upon it, you, or rather your Geraniums, will be quite safe, even if you pack them four or five layers deep, with some dry stuff between the layers and among the plants. But we shall bury some of our spare plants, at the Experimental Garden, under old trees in the "wilderness." They will be a foot under ground, or a foot of dry, dusty earth all round them, and in amongst the plants, and in the spring, if you please, we shall compare notes. Recollect we may have a long and troublesome winter after that comet. If water, or melted snow, is likely to stand under your cold pit, or at all near it, we can read your notes before you begin,—all your plants will be as dead as red herrings, while ours will be sprouting like Scotch Potatoes before it is time to lift them.

A young lady in Surbiton, who was lately married, from the West End of London, asked me to give her directions, for her mother, to keep *Tom Thumbs* this winter. After seeing the hundreds which I am obliged to provide for on the scheming principle, and as this is the newest thing on the subject, I cannot do better than get my pencil notes put into black and white, and send word to the lady to get this number of *THE COTTAGE GARDENER*, on purpose to read about these troublesome *Tom Thumbs*, which, by-the-bye, were in pots, or vases, last summer, if I recollect rightly. The advice was this. Get them up, or shake the soil from the roots, if they are in pots, very carefully; cut off all the leaves quite close—to unhinge leaves requires more care; have them closely planted in shallow boxes, not more than five inches deep, nine inches wide, or more than two feet long. Shake the box two or three times, to settle the mould among the roots; and then give each of them, or each box, a gallon of water, to get the soil more uniformly close among the roots. Let the boxes drain well, and put half an inch of dry soil all over the surface of the boxes. Have them out of doors every fine day all through the winter, and never leave them out at night, on chance of not having frost. Water the boxes on a fine, dry day,—once a month, till you come to March; then twice; and three times in April; and whenever you see a spot, or black speck, on any part of the plants, examine it gently, with the point of a knife, and remove it, if it appears to proceed from decay. I said nothing about good drainage to the boxes, as every lady knows about that now-a-days.

D. BEATON.

BICTON.

THIS celebrated residence of Lady Rolle is about twelve miles from Exeter. A coach leaves the London Hotel, about four o'clock every alternate afternoon, beginning on Tuesday, and passes the lodge gates. A mail coach leaves the Post-office, at Exeter, every morning at five, and goes

to Budleigh Salterton, some fifteen miles from Exeter, and three from Bicton. Though this latter is a round-about way, the ride is a very pleasant one, and the coach returns in the evening. The best accommodation may be obtained at this Budleigh Salterton, a very pleasant rising watering place. I understand, that no general visitors are admitted at Bicton, without applying for, and receiving, an order of admission from Lady Rolle. Free entrance, on all days but Sundays, is given to all classes of gardeners, be they head-gardeners or apprentices.

Having visited this place at the end of August, by this time our recollections are becoming less vivid than they were. There is some difficulty, without having seen a plan, of forming a picture in the mind of such a place as Bicton, not only owing to its vastness, but also to the fact, that the main features are self-dependent, each almost distinct in itself, and gaining but little in the way of association, or of contrast with others. Thus, a regular artistic flower garden, with its terraces, vases, and statues, would both give and receive attractions from contiguity with an elegant mansion; but at Bicton, though at no excessive distance, I am not aware that the one is even seen from the other. This fact will be variously estimated by different minds. One class will regret, that the fine sheet of water, with its level lawn, steep banks beyond, and its sloping flower garden, backed by massive ranges of plant and forcing-houses, are not seen from the windows of the mansion. Another class will rather be glad that,—having the architectural adjuncts of the ranges of glass referred to,—there is no more prominent object to divert attention from the contemplation of the flower garden. Given a large rhomboidal square, and entering by the Sidmouth lodge,—we fancy that the four most interesting objects would be placed near the four respective angles. The flower garden and the house on the east side; the kitchen garden and a prospect tower on the west side; whilst a noble arboretum, fully a mile-and-a-half in length, and some 180 feet in breadth, commencing close to the mansion, winds round the inner park, until it reaches the flower garden, and passes at no great distance from the kitchen garden, and the interesting Pine wood, where the prospect tower is situated, and, so far, connecting them altogether. If in this I should fail to convey a correct idea, I fear it will be partly owing to Mr. Barnes' kindness in taking us over the undulated park, to see so many specimens of fine Elms, Evergreen Oaks, &c., by which we got confused as to our direction bearings.

Between the outer and inner lodge by which we entered from Salterton, the Sidmouth entrance is a striking avenue of Araucarias, planted about 1842, all flourishing, and nearly equal in luxuriance, with the exception of a few that had met with accidents. One or two had lost their leaders, and, like one noticed at Messrs. Veitch's, had formed a fresh one, which was growing vigorously. Each of these trees had been planted on wide raised circles of good fresh loam, and the free growth showed how much they liked such treatment. The plants on each side were about eight yards from the road, and sixteen yards from each other, so that there will be full room to develop their beauties. Beyond this line of Araucaria, a corner had been devoted to Wellingtonia. The plants were about sixty feet apart, each placed in the centre of a knoll, some two feet in height, and from fifteen to twenty feet in diameter, rounded to the natural level at the outside, and all formed of fresh sandy loam. As the trees grow, so that the roots reach the outside of the mound, fresh layers of soil will be added. With the exception of one or two plants at Exeter, these were, individually, about the best plants we had seen,—vigorous and healthy, and nearly as wide at the base as they were long in height.

There are no landscapes more deceptive, as to distance and surface outline, than those of South Devon. Glance around you from an eminence, and you imagine the

ground is nearly level, and a certain object at no great distance; but try to reach it, and you find you have many a narrow valley to cross, and many a Primrose Hill to climb. Were it not for this peculiarity, we might say, that the mansion at Bicton was placed on a hill; but, considered with its surroundings, our Highland friends would say, it occupied a *knowl*. From that *knowl*, or knoll, a fine peep is obtained of the sea, at a distance of three miles, and of a diversified undulating scenery all round,—some partaking of a wild, and others of a richly cultivated character, whilst some of the heights are covered with thriving young plantations. The house originally had been a plain, massive, parallelogram of brick, more distinguished for its interior elegance and commodiousness, than its external architecture. Of late years, an addition has been made in the centre, of a semicircular form, but also in the same plain style of architecture; and on each side of this new park a large glass-house has been erected,—that on the one side, to act as a banquet and ball-room; and that on the other side, as an elegant conservatory. In the latter, communicating with the drawing, or sitting-room, climbers were growing nicely, and Camellias and Oranges, of large size, had been planted in rough, fresh soil,—so much recommended some years ago by the indefatigable manager, in these and other pages; whilst a liberal amount of baskets, vases, &c., furnished the ready means for keeping the house gay at all times and seasons,—this extra supply of flowering-plants being brought from the houses in the flower garden.

Close to the house, and between it and the commencement to the arboretum, is a menagerie, chiefly devoted to birds, the smaller animals, and a great quantity of the different varieties of tortoises,—all seemingly happily enjoying themselves. The tortoises, whether on land or water, were thoroughly at home, and seemed to be regular salad Lettuce lovers. A stream of pure water passes through the yards, and I rather think the different compartments of the houses can be heated at pleasure. Here a naturalist would love to linger.

The arboretum is distinguished by having the specimens arranged on each side of a beautiful green drive. From that drive the trees and shrubs on each side can be seen, and their names, which are in large letters, read. The drive is kept as smooth as a carpet lawn. The spaces between the trees are also mown, but generally not kept so short; and, to ensure economy in management, the mowings, instead of being rotted when cut, are consumed by sheep, &c. In the whole of the garden establishment, there seemed to be a thorough absence alike of parsimony or waste. The arboretum is arranged on the natural system, the orders and genera following each other, much as they do in Loudon's "Arboretum" and *Fruticetum*, beginning with Clematis and Magnolia, and ending next the flower garden with the Pine, Juniper, and Cypress tribes. Such climbing plants as the Clematis, Vitis, Rubus, &c., were furnished, as supports, with young cut and snagged trees of the Spruce and the Larch; and, though in the case of some of the smaller specimens their dwarfness gave a rather undue prominence to the lichen-covered snags, their fitness for such a purpose stamped them with appropriateness, the stronger-growing seeming thoroughly at home and safe with the smallest amount of the gardener's care. In a group of the Bramble, Mr. Barnes drew attention to the interest that group presented, from their various-tinted woods in winter. Fine masses of Rhododendrons and Azaleas were growing, with but little extra assistance from the naturally sandy loam. But, though the whole of that more than a mile-and-a-half of promenade was deeply interesting, our attention was chiefly fixed on the splendid Magnolias, near the commencement, almost every species and variety finding there a suitable home,—the varieties of *grandiflora* and *tripetala*, *macrophylla*, *obovata*, &c., equalling almost in size and luxuriance their next neighbours,—such beautiful Limes as *Tilia macrophylla*, *laciniata*, *heterophylla*,

argentea, *pendula*,—and such fine Maples as *Acer campestre variegata*, *alba variegata*, *obtusata*, and *striatum* (with its beautiful bark). And our attention was fixed on these, just because it is rare, except in the south of our island, to see Magnolias, Myrtles, and Hydrangeas, growing as freely as Apple trees in the midland counties.

The next point of equal attraction was the Pinetum, placed next to the flower garden, and rich in fine specimens of Araucaria, Deodar, Cryptomeria, Taxus, *Pinus Halepensis*, *Benthamiana*, *insignis*, *macrocarpa*, *Montezumæ*, *Devoniana*, *excelsa*, *Lambertiana*, &c.; *Abies Douglasii* (several varieties), and *A. Menziesii*; *Picea pinsapo*, *nobilis*, *Webbiana*, *Normandiana* (the finest specimens I have yet seen), *Cephalonica*, &c.; along with almost every known kind of Arbor Vitæ, Juniper, and Cypress. In passing some fine plants raised from *Cypressus macrocarpa* seeds, the foliage thickly dotted with their yellowish-brown buds, Mr. Barnes said he found sprigs of this Cypress, so gracefully loaded with buds, of great use for mixing with flowers in vases and glasses in winter. It would be most interesting to obtain, not merely a list, but the height and width of some of the most prominent and rare plants in this arboretum, along with the time of planting, as furnishing a good idea of what such plants will grow to in a certain time. This is, however, what no one could attempt to do in a passing visit. In a few cases that I guessed at height I was beside the mark, but generally made the height more than it really was. The whole of this arboretum, backgrounded on one side for most of the way with Laurels, evergreen Oaks, &c., was in excellent keeping.

Such a collection furnishes rich elements of study for gardeners in general, and young gardeners in particular. The whole drive is a succession of changes and variety. That the interest throughout is not sustained at enthusiasm point, is not at all owing to the noble-hearted proprietor, nor the accomplished designer (Mr. Glendinning), but to the hard fact, that, though all plants are beautiful, we do feel a descent, when we pass at once from a noble Magnolia to a prickly Barberry. This might be partly remedied, by throwing the least interesting into groups, and thus breaking in a little on the classified arrangement. From such a noble collection, gentlemen with limited space may learn the propriety of selecting rather than collecting. Ample as the space is, yet in a few years many of the best specimens will be crying out for elbow room.

Near this end of the arboretum is a beautiful Swiss cottage, placed on a height, with a piece of water in front, and a fine Oak Pollard on a patch of ground in its centre, the water being the remains of an old moat, supplied by a powerful spring, which liberally furnishes the garden with water. I presume that the ancient residence of Sir Walter Raleigh was at no great distance from this spot. The cottage is chiefly composed of elegant wickerwork, and the floor is formed of the knuckle bones of sheep. There is a fine old chair, called Sir Walter Raleigh's chair, and, among many other curiosities, a beautiful fan, made from the leaf of a Palm. The grass walk, which rises on each side to the cottage, is graced at regular intervals with elegant low standards of the *Laurestinus*,—among the first I had seen thus treated,—and beautiful and compact they looked. They receive a slight pruning to keep them regular once or twice every year.

The principal architectural objects at Bicton are:—An obelisk in the park, seen from a considerable distance at sea, forming a striking feature from many positions, and breaking the sky outline in a vista in the flower garden. A templed bower, or conservatory, in a line with the obelisk, and forming the centre of the front range of houses in that garden. And a prospect tower, built by the present Lady Rolle, in the Gothic style, at a high point, in an interesting Pine wood. The lower floors of this tower are used by people living in it; but the higher stories are each devoted to objects of general and anti-

quarian interest,—one having a rich collection of ancient China. The view from the summit embraces a large extent of sea, and a great extent of very diversified land scenery.

Not the least attractive to the gardener, however, are the miles of green drives through the wood,—the young specimens of the rarer Pine tribes, that have been planted,—the collections of the newer kinds of Rhododendrons, by the sides of these walks,—and the thousands upon thousands of the commoner kinds, which are hedging in these drives, and disputing with the Ferns the right of occupying undergrowth space. Mr Barnes told us, that, in one of his first years at Bieton, he planted more than thirty thousand Rhododendrons by the sides of these drives. In several cases, from slashing and layering the strong shoots at first, the plants have gone on laying themselves, so as now to extend, from the original plants, to the distance of thirty feet and more into the wood. Except with the rarer kinds, that receive, I presume, a little extra assistance, these commoner sorts are revelling in the natural sandy loam of the place. The *arborea*, and other early hybrids and varieties, open their blooms very early in spring; but, before they do so, and when merely swelling freely, a supply of cut flowers is obtained for the mansion, by placing the ends of the cut shoots in water, in a forcing-house, until the blooms open.

R. FISH.

(To be continued.)

THE GROWTH OF CELERY RETARDED BY HOT WEATHER.

THE three principal agents to horticultural success are light, warmth, and moisture. The growth of most plants is accelerated by the abundance of all three, while the ripening of fruits often depends on the first two, and sometimes plants attain a premature growth by these being in excess of the last one,—moisture. But this is not always true: some plants, whose well-being depends on the amount of moisture they receive, remain almost stationary, when that useful agent is not abundant. Such, for instance, is Celery, which in some places remains, for several weeks in the hottest part of summer, a sort of passive spectator of what is going on, and only starts into active growth when the rains, and a cooler atmosphere, set in at autumn. This is invariably the case here (Staplehurst), where we have but little rain during the summer; but, when those rains of autumn do set in, then there is a start, and great progress is made.

Now, it is not my purpose to enlarge upon this matter, and to advise deluges of cold water, to cool and moisten the ground down to the température wanted by Celery; but I write to show, that, though warmth and moisture are necessary agents in most cases, a certain amount of cold and moisture is more beneficial to Celery; as this vegetable, like the fruit of the Gooseberry, is had in better perfection in the northern counties than it is south of London; while on very dry hot soils Celery is very difficult to obtain in the late summer months, but keeps better during a long winter, the soil being more favourable to its doing so. On this account, it would be better not to attempt growing too much summer Celery in very dry places; but to have as much for winter use as possible, unless when special circumstances render it necessary to crop differently.

It is somewhat remarkable that young Celery plants, planted out in May and June, should continue almost in a dormant state, without advancing to premature ripeness. Lettuces and Cauliflowers run to seed, Cabbages turn blue, Peas become mildewed, and even Onions, which like warmth, become stunted in growth, if dry, hot weather continues; whilst Celery remains much the same as when planted, patiently awaiting the autumn rains, when it advances apace, not to seed, if the variety be good, but to that useful size which constitutes such an important article in the salad line.

I have been led into the above remarks by hearing complaints of good useful Celery not being forthcoming, in August and September, in dry places. The plea for its not being had at that time is excusable enough. Celery is a marsh plant, its roots ramifying through the muddy sediment of ditches and wet places, often but a very little beyond the reach of salt water. Of course,

in such places it is enjoying a cool bottom; and what warmth the summer's sun directs towards it tends to raise a sort of vapoury exhalation amongst its foliage, equally assistant to its well-being. This is poorly imitated in the dry, almost dusty soil of an ordinary kitchen garden; and, until nature steps in to modify the evil by the rains she sends in autumn, there is but little progress: fortunately, what progress there is, is not retrograde. But, until we have better means of imitating the natural condition of Celery in the dry summer months, in our dry situations, than we now possess, of occasionally pouring a few gallons of hard water over the plants, we must be content to come in second to the Lancashire growers of this vegetable, who, in addition to a humid atmosphere, have more than double the amount of rain we have, and, in other respects, a soil more in accordance with its requirements.—J. ROBSON.

A SELECTION OF VERBENAS.

Seeing in THE COTTAGE GARDENER, of September 8th, a long list of Verbenas, from Mr. Scott, and thinking an abridged list might be of use to some of your readers, I shall enumerate eighteen or twenty of the very best for bedding purposes. I have grown most of the sorts mentioned in Mr. Scott's list, and have devoted a piece of ground for some years past to Verbenas, where I prove them previously to planting out on the lawn.

I must here give Mr. Scott his due, by saying that his is a faithful list. But it would be folly for any gardener to grow them all, as there is such a sameness in many of the varieties. I get most of the new ones every spring, and I then weed out some of my older sorts, after I have proved them. I shall begin with—

Admiral Dundas. Not in the list, but one of the very best Verbenas grown. Crimson, a shade lighter than *Géant des Batailles*; nearly as good a habit as *Purple King*. Stands the sun and rain well. I have a bed of it that has been a complete mass of bloom ever since the beginning of June, and is now the same, and has only been pegged twice all the season.

Mrs. Woodroff and *Defiance* are the two best scarlets.

Mrs. Holford. The best white. All the other whites, such as *White Perfection*, *Gem of the Whites*, *Celine Mallet*, *Moonlight*, and many others, are useless in comparison with *Mrs. Holford*,—some being rambling, and others altogether weak growers.

Purple King. The best purple blue for bedding purposes.

Matchless. True to the description given of it.

Duke of Cambridge. Also true to its description.

Domwilliana. Rich bluish purple, not in the list. Large white eye:

Lord Raglan. A great deal better than *Cardinal Wiseman* and *General Simpson*. True to the description given of it.

Evening Star. True. If I were Mr. Beaton, I should prefer this to *King of Scarlets*, the latter being a rambling grower.

Loveliness. True. A beautiful rose.

Madame de Staël. Bright cerise, yellow eye. A good bedder. Not in the list.

Manrico. True. *Perpurea Magnifica*. Both rich plum. Good bedders, and rather strong growers. The latter not in the list.

Leviathan. Better than *Standard Bearer*. Very large white eye: Not in the list.

Prince of Wales. Bright ruby-crimson, with large lemon eye. First-rate.

Empress Eugénie. A shade lighter than *Reine Victoria*. Much better than her Majesty, or *Souvenir de l'Exposition*. A good bedder.

Brillante de Vaise. A fine thing for a large bed, or rockwork.

The following sorts are better adapted for pot culture, or for border plants. A long row, with the colours nicely intermixed, is very effective:—

Victory. Rosy purple, with large light eye.

Géant des Batailles. Fine crimson.

Nymph. Pinky white, large.

Mrs. Woodroff. Scarlet.

Mrs. Holford. Fine white.

Topsy. Dark purple, white eye. Large and fine.

Wonderful. Rich plum. Large.

General Simpson. Carmine lake, with bright eye.

Mrs. G. F. Caley.

Doctor Maclean. Fine lilac, with large white eye. Better than *Tranby*, or *Annie Laurie*.

Earl of Shafesbury. Purple rose, with large white eye. Fine.
Miss Trotter. Bright dark scarlet, with yellow eye.
Cynthia. Crimson, with white eye. Very large.
Beauty of Castille. Rich violet-rose. First-rate.
Eblouissante. Fine orange-scarlet.
Madame Matras. Pink, with crimson eye; very large truss.
 Strong grower.

Nosegay. Fine rich salmon. Dwarf habit.
Prince of Oude. Dark purple, with white centre. Fine.
Sir J. Oulram. Purple, with fine white eye.
Reine des Amazons. French white, with deep rose centre.
Madame Jardin. Lavender-rose, with fine white eye. Strong grower.
Perfume de Madoline. Splashy white. Very pretty. Dwarf habit.
Mademoiselle de Valière. French white, mottled and striped with lavender.

La Stella. A rambling grower. See *Admiral Dundas*.

I have grown all the Verbenas Mr. Scott names in his list, with the exception of seven or eight varieties.—S. W. WILLS,
Woodlands.

BEE-KEEPING IN DEVON.—No. III.

THE BALANCE OF POWER—FUMIGATION—A FAILURE—CHLOROFORM—DRIVING—ATTACK AND DEFENCE—DEFEATS—RENEWED ATTACK AND DETERMINED RESISTANCE—VICTORY!

My three hives remaining still on the heath, and being amply provided against the coming winter, as stated in my last communication under this head, I determined upon restoring the "balance of power," in respect of population, by uniting to No. 1 and No. 3 (both of them shallow eight-bar boxes) the inhabitants of a couple of stocks belonging to a neighbouring cottager, which would otherwise have suffered capital punishment by brimstone.

Having obtained a reprieve for these unfortunates, I set to work to rummage out my old fumigating apparatus, purposing to commute their sentence to transportation. But here one of those annoying failures, which few apiarians have not at some time experienced, interfered to mar my intentions. After what appeared a most successful fumigation, not one-half the bees in either instance recovered; and I had the mortification of finding that fumigation with fungus might be quite as fatal in its effects as my friend S. B. Fox's experiments with chloroform; and that I had condemned the majority to a certain, and, probably, not less painful death than that of suffocation by brimstone. Added to this was an opinion which I have long entertained, that fumigation is permanently injurious, even to such bees as appear at the time perfectly to recover from it, and is, therefore, of little value in adding numbers to a weak stock.

Often have I perused the instructions for "driving," given in nearly every work on bees, and deeply have I pondered on Dr. Bevan's axiom, that "not to be capable of performing it will hereafter be regarded as an *opprobrium apiarium*." It will readily be believed that these repeated readings and ponderings have resulted in divers breaches of the peace in the case of sundry unfortunate stocks which I have at various times turned bottom upwards, and most perseveringly assaulted, with the view of inducing their inhabitants to take refuge in the empty hives, which, in each case, so invitingly surmounted them. It is needless to recapitulate the number of instances in which the defence has proved stronger than the attack, and in which the besieger, after a tremendous and well-sustained fire, both of artillery and musketry, in the shape of rappings and tappings, has been compelled to retire in confusion, with aching arms and elbows, followed by a triumphant roar from the victorious garrison, who, when released from their confinement, have made so vigorous a *sorite* as effectually to raise the siege.

Stimulated by the desire of being able to transfer a stock of bees by some means less injurious than either fungus or chloroform, and warned at the same time by the recollection of repeated failures, the readers of THE COTTAGE GARDENER may imagine me, at half-past nine in the morning, of the 28th of August last, seated on an empty bee-box, under the welcome shade of an Apple tree, rapping away on the outside of a populous stock of bees, which had not swarmed during the summer, and, therefore, condemned to the brimstone pit. The full hive was, of course, inverted, and surmounted by an empty one of the same size, the junction being secured by a cloth tied round it, and the whole

steadily fixed in a pail. The continued rapping soon produced a furious roar, and it appeared evident, that if they could get at me I had little mercy to expect. However, as I was out of their reach, this did not trouble me much, and, in reply, I rapped away more vigorously than ever, occasionally varying the performance and awakening a distant echo by a fantasia on the pail, which, being hollow, resounded with a clatter that might have been heard nearly a mile off. This I was induced to do from reading some author who recommends an iron crock as a support for the inverted hive, and the iron being rapped instead of the hive itself, the noise produced by its reverberation will, it is said, soon cause the bees to ascend. Pausing occasionally to take breath and rest my elbows, I applied my ear to the united hives; but still the resolute roar in the lower, and almost total silence in the upper one, proclaimed their adoption of the principle of "no surrender." Soon I found it necessary to wipe off the perspiration, which stood in large drops on my forehead, or slowly trickled down my face, and, as the sun rose higher and higher, and at last poured down its burning rays almost perpendicularly on my head through the straggling branches and too scanty foliage of my sheltering Apple tree, I began to fancy that there might be other and more agreeable modes of spending a hot day in August, than performing a "devil's tattoo" on a refractory hive of bees, who still persisted in proclaiming, in unmistakeable accents, that they "wouldn't go." At length I bethought me of Wildman's advice, to raise the empty hive a little from the full one as soon as a part had ascended, and forthwith proceeded to act upon it. Having removed the cloth, I slightly lifted the empty hive, and, of course, released the bees; but few, however, took to wing,—the majority were evidently too full of honey, or too much frightened by the continued disturbance, to contemplate an attack. Still, scarcely any of the bees had taken refuge in the empty hive, the great majority remaining in their original domicile, though in a very disturbed state,—rushing about the combs, but steadily declining to accept the proffered asylum. Another half-hour elapsed, and, Wildman's plan having failed, matters began to look serious. Was I still to labour under the *opprobrium apiarium*? and were the morning's exertions to terminate only by adding another to my already too numerous defeats? Forbid it, shades of Reaumur and Gedde, and all the host of bygone apiarians, who, whatever their shortcomings in other respects, were at least masters of the noble art and mystery of "driving."

Finding myself "driven" almost to my wits' end, I at length separated the two hives, and, placing them side by side in the bee-house,—the empty hive occupying the spot from which the full one had been taken,—I attentively watched the behaviour of the stragglers, in the faint hope of discovering that the queen had been amongst the select few whom my two hours' discord had induced to take refuge in the empty hive. Vain hope! After watching a considerable time I found myself unable to determine the point, and at length, somewhat refreshed with this pause in my labours, but in no very enviable state of mind, I cap-sized the full hive once more, and desperately resumed my tattoo.

The hard work is certainly beginning to tell upon my arms, and, in a much shorter time than before, I am glad to desist, deluding myself with the assurance that it is necessary to listen more frequently for the ascent, which cannot now much longer be delayed. Though I whisper this to myself, I do not really believe a word of it, and, in a sort of devil-me-care fashion, once more listen to the uproar. Do my ears deceive me? No: they are really on the move! and, after a few minutes more rapping, I have the satisfaction of removing the full hive, with only a few stragglers remaining in it,—having succeeded in my object after nearly three hours' exertion.—A DEVONSHIRE BEE-KEEPER.

TOMATOES RIPENING ON THE OPEN GROUND.

DURING the last two or three years, there have been several articles in THE COTTAGE GARDENER, relative to the Tomato ripening its fruit on an open border; and, in some cases, a considerable amount of credit was awarded to the grower for his success in that way. It is not my purpose to detract from the merit so awarded; but I may simply say, that ripening Tomatoes on the open ground is a much easier affair than is generally supposed; and the plant is much more accommodating than many others, which suffer less from frost; for, be it observed, this plant is one of the first to suffer from the icy king.

But damaged fruit, when left on the ground, send up abundance of seedling plants the following year; and, though these are, of course, much later than those reared under glass, with all the advantages of gentle heat, and other nice things, nevertheless, self-sown plants are often early enough to ripen their fruit, as I have proved, in more seasons than one. The present year I removed a few from a warm border, backed by a close-wooded paling, to one of the least-favoured spots in the garden, for early maturing its crops, where they never saw the morning sun till eight o'clock, or after, and a high wall shaded them from the meridian after the end of September. Still, they have ripened some of their fruit, by a few boughs being laid under them, to keep them from the ground,—no tying up, and but very little pruning, or other attention being given them. Certainly, a little trouble that way would have benefited them very much, as I consider stopping, at both top and toe, to be necessary, to hasten them to maturity.

I merely mention this case, in order to remove the idea, that Tomatoes are so delicate, as not to ripen their fruit, except under very favourable circumstances, as I have never seen them do so well under glass as they do without it; only it must be borne in mind, that they are seldom indulged with a glass-case anywhere; but in places where they will not ripen well out of doors, and even then they run a great deal to wood.

In the dull, cold autumn of 1856, and one or two seasons before that time, a disease attacked the Tomatoes, similar, in every respect, to the one which made such destruction in the Potato. The consequence was, that the later fruits did not ripen at all,—the stem dying, and leaving them to wither or decay. The features of this disease were the same as the one exhibited in the Potato; but I did not perceive the least trace of it last year, nor in the present one,—both years having been warm and dry. Whether any clue to the cause or prevention of the Potato disease can be derived from the above, I cannot say; certain, however, it is, that the disease is much less in the Potato this season than I ever remember to have known it since its first appearance.—J. ROBSON.

CONFINING BEES DURING WINTER.

A VERY interesting paper was read at the recent meeting of the British Association, describing the production of a fungoid disease in bees that were confined during winter.

The circumstances under which the disease appeared were as follows:—The hives were lifted from their floorboards, placed on coarse cloths, which were then tied around them, and in that state they were suspended in a room during the winter months. On opening the hives in the spring, three out of the four stocks were found to have perished, the bees suffering from a fungoid vegetable growth.

I have quoted this paper to afford me an opportunity of entering my most earnest protest against the filthy and unnatural plan of confining the bees in their hives during winter. These terms may appear to some persons too strong, yet that each is true is capable of proof. The plan is unnatural, being opposed to the instincts of the bees, which lead them to come forth during the sunny and warm days that occur in winter, gather pollen, and discharge their excrement, and also remove from the hives the bodies of such as may have died. What bee-keeper in this neighbourhood has not recollections more than usually pleasant of last Christmas Day, when his bees were out in hundreds, evidently much to their enjoyment, and the advantage of their health?

When confined, the whole of the excrement is of necessity discharged within the hives. The dead bees also remain; and both these causes produce a putrid atmosphere, that must be most injurious to the insects, and highly conducive to the production of fungoid and mildewy vegetable growths.

What object is supposed to be gained by this method I do not know. If persons imagine that the bees should be protected against cold, I can best reply by quoting (from memory) the question of Gellicu, who asks,—“Who shuts up the wild bees in the hollow trees in the Lithuanian forests, where they prosper so well, although the winter is excessively severe for many months of the year?”

The question may be asked,—Is it then never desirable to confine bees? Some persons reply, that it is advantageous to prevent their coming out when the snow is on the ground, and they are allured from home by a bright and deceptive sunshine. It is not my own practice, even to confine them under these circum-

stances. I merely place an opaque object—such as a brick or a piece of wood—on the alighting board, or in some way shade the entrance from the bright reflected light of the snow; and I find that, with a temperature below freezing, there is no chance of seeing a bee out, unless the hives are roused from their torpid state by shaking, or some other excitement.—W. B. TEGETMEIER.

MEETING OF THE ENTOMOLOGICAL SOCIETY.

The October meeting of the ENTOMOLOGICAL SOCIETY was held on the 4th inst., J. O. Westwood, Esq., M.A., Vice-President, in the chair. The donations received since the last meeting comprised the publications of the Royal and Zoological Societies, the Society of Arts, the Entomological Society of the *Pays Bas*, the third volume of Mr. Stainton's work on the Natural History of the Tineina, the first volume of the Monograph on the Elateridae, by M. Candeze, &c.

Mr. Augustus Shepherd exhibited specimens of a small Moth taken by Mr. Cooke, near Liverpool, at the beginning of September, and regarded by him as a new species, which he had described in the “Zoologist,” under the name of *Peronea potentillana*.

Other specimens were also exhibited by Mr. Edlestone, together with a series of varieties of *Peronea comparana*, to which Mr. Cooke's insect was also evidently referable.

Mr. Samuel Stevens exhibited various splendid Butterflies, from Celebes, just received from Mr. Wallace. Amongst them were both sexes of *Papilio Remus*, *Haliphron*, and *Androdes*.

Mr. Stainton exhibited a variety of small Moth, taken in Cornwall, in June, by Mr. Boyd. Among them were *Diasemina Ramburialis*, only known, hitherto, as a native of Corsica, and *Gelechia ocellatella*, a native of the island of Madeira.

Mr. Fred. Bond exhibited a fine specimen of *Xanthia gilvago*, reared from the larva found feeding upon the seeds of the Elm. Also, a newly-disclosed specimen of *Agrotis saucia*, with the wings covered by at least 150 minute Acari.

A number of insects captured in Nova Scotia, by Mr. Piffard, were also exhibited.

Mr. Tegetmeier brought forward some additional proofs that the honey bee, in the perfect state, will occasionally feed upon pollen, or bee-bread, generally supposed to be eaten by the larvae alone. He had placed some cells, containing pollen, in the upper compartment of a hive in which he had introduced the bees from two ordinary skeps, and he had, subsequently, found the sides of the cells eaten down, and a portion of the pollen consumed. He had also dissected some of the bees, and had found pollen in the ventricles. This had taken place in a hive into which he had introduced several pounds of syrup and honey, so that the bees had not been driven to eat the pollen from want. He added, that Kirby and Spence had noticed the fact, of bees eating pollen, although overlooked by other writers. He also repeated his observations on the original circular form of the cells of the comb, and stated, that Mr. Charles Darwin had, at his suggestion, performed the same experiment with coloured wax, proving that the bees—having at first used part of this wax in the construction of a circular cell—had subsequently re-masticated it, and spread it over a considerable extent of the hexagonal sides of the cell when completed, and others adjacent added.

Mr. Stainton stated, that Dr. Whewell, at the meeting of the British Association, at Leeds, just ended, had made the suggestion, that the angular position of the ocelli, in front of the bees' heads, might be the cause of the bees working the wax into a hexagonal form. But Mr. F. Smith contended, that such an idea was completely upset by the fact, that the first cells built by the queen wasp, previous to the birth of the worker wasps, were so small that the head of the wasp could not go into them. He also exhibited the cylindrical cells of an *Anthophora*, and contended that on no principle of pressure, or approximation, would the bee alter its form to a hexagon. It was, on the other hand, contended, that as this was a solitary, and not a social species, the principle of hexagon cells could not be applied to it; neither could the same argument be applied to wasps' cells as to those of bees, the material of which the former were made being of a totally different nature to that of the latter.

Various insects from Demerara, including the larva of a gigantic species of *Dynastes*, were exhibited by Mr. Piffard.

An extract from a letter from Mr. Bates, on the river Amazon,

was read, giving an account of the habits of a small Beetle, allied to Scarites, which inhabits the nests of the white ants (*Termitidae*).

The last two meetings of the Entomological Society have (as might reasonably have been expected, from the great activity now manifested among collectors, and the peculiarly favourable character of the past summer) been especially distinguished by the announcement of the captures of a considerable number of very rare species, and many even entirely unknown previously, as natives of these islands. Not only have Ireland, Wales, and the middle districts of Scotland been explored, but the more remote regions of Cornwall and Shetland; and some important results in a geographico-zoological point of view have been obtained. Thus, whilst species have been captured in the extreme southwest of England, hitherto only known as natives of Corsica and Maderia, the Shetland Islands have produced species quite boreal in their range. Some interesting facts and discussions connected with the economy of the hive have also been communicated to, and taken place at, these two meetings of the Society.

The chair at the September meeting was taken by Dr. J. E. Gray, F.R.S., President of the Society. Amongst the donations announced as having been received since the last meeting, were—the publications of the Stettin Entomological Society, the Royal Agricultural Society, the Zoological and Linnaean Societies, and the Society of Arts.

A number of Coleopterous insects, collected in Shetland, near Lerwick, by Mr. Squire, were exhibited. Of these, as many as seven were species presumed to be entirely new to the British fauna, including *Helobia nivalis*, *Patrobus Lapponicus*, and new species of *Hydroporus*, *Agabus*, and *Omalium*.

Dr. Power also exhibited various rare Coleoptera, from Preston Marsh, Lancashire. Amongst these was a remarkable monstrous specimen of *Bembidion concinnum*, one of the legs of which was furnished with two perfect, and half of another imperfect tarsi.

Another beautiful Beetle, new to this country, the *Tilloidea unifasciata*, was exhibited by the Rev. Hamlet Clark, having been forwarded alive to Dr. Baly, from Malvern.

Mr. Samuel Stevens exhibited a specimen of the very rare *Pieris daplidice*, taken at the South Foreland. He also exhibited various interesting Coleoptera, collected by Mr. Shield, at Monte Video, amongst which he especially noticed a species of Claviger, which had been found in an ant's nest, thus proving that the habits of the family, as observed in our northern climates, were also possessed by their brethren in the tropics.

Mr. Douglas exhibited various Coleoptera, taken at Seaford, in Sussex. Amongst them were four species of Heterocerus, and a species of Bryaxis, apparently new, found in mud, under stones, in a saltmarsh.

Mr. MacLachlan exhibited *Acrobati (vulfo-tibiella)*, taken at the end of July, at Forest Hill.

Mr. Frederick Bond also exhibited a very fine series of the perfect Moth, reared from the Jumping Seeds, from Mexico, which excited so much interest during the last winter. The moths had been described by Mr. Westwood, under the name of *Carpocapsa saltitans*.

Mr. Waring exhibited a remarkably pale variety of the Moth, *Pæcilo campapopuli*.

Mr. Adam White exhibited a curious flattened pupa case, received from China, from one end of which a Beetle, belonging to the family Atopidae, was in the act of making its escape. He also directed attention to the remarkable apparatus possessed by the females of the allied genus Cebrio, for fastening particles of earth together for forming their cocoons, and also alluded to the remarkable larva of the North American genus, *Eurypalpus*, which had been described by Dr. Kay as a crustaceous animal.

A list of insects collected by Mr. Nicoley, at St. Salvador, was read.

Mr. Tegetmeier communicated to the Society an observation he had recently made on the economy of the hive bee, having noticed that bees, at the entrance of a hive, had eaten small pieces of pollen, dropped from the legs of the worker bees. He had also placed two swarms in an observer hive, and had noticed that pollen was carried in within a few days before there could have been any young grubs to have fed upon it. He also mentioned an experiment he had made with a view to determine the true primary form of the cells of the comb, which, although ordinarily of a hexagonal form, there were good grounds for considering to be primarily planned of a cylindrical shape. With this view he had placed a mass of solid wax in a hive, and he had observed, that the bees had excavated cells in it, all of which were of a cylindrical

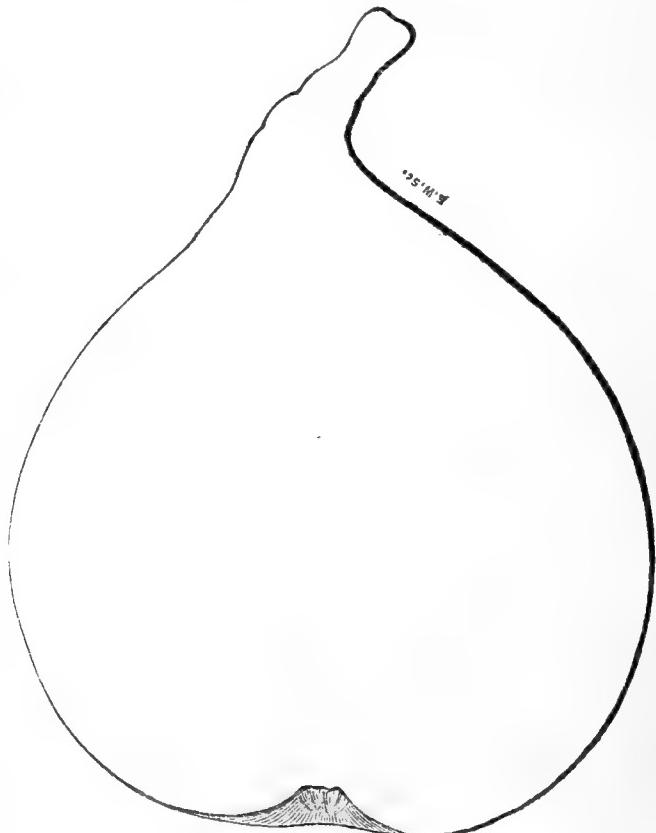
shape, with hemispherical bottoms. They were all, it is true, independent of each other, and he had no doubt, that, when the intervening spaces were excavated, the bees would alter the shape of the cells, and the intervening wax would become flattened. He advised that experiments should be tried with wax, coloured with some vegetable fluid, in order to show how the bees modified the shape of the cells, when adjacent cells were added.

Mr. F. Smith contended, that the hexagonal theory was proved by the proceedings of wasps, as well as by social bees. He could affirm, that not a single species of wasp forms a cylindrical cell. In the common wasp the base of the cell was circular; but in the South American polybra it was flat at the base, although hexagonal in the cell. He also exhibited the comb from the nest of another wasp, in which the outside of the outer series of cells was hexagonal, contrary to the circumstance relied upon by Mr. Tegetmeier, that the outer cells in the honeycomb are always circular on the outside.

Mr. Brayley stated, that the opinion that the cells of bees owed their hexagonal form to the contiguity and pressure of the adjacent cells was not a new one, having been maintained fifty years ago by Mr. Wollaston, in Davy's "Agricultural Chemistry."

FRUIT AND FRUIT TREES OF GREAT BRITAIN.

(Continued from page 38.)



No. XI.—BEURRÉ SUPERFIN PEAR.

WHEN this excellent Pear was introduced to notice by the Pomological Society, and recommended to the notice of English fruit growers, an attempt was made by M. De Jonghe, of Brussels, to show that it was not a variety of such excellence as the Society represented it to be, and that it was merely the old and inferior Cumberland Pear, with a new name. I showed then, that this was not the case, and that M. De Jonghe not only laboured under a complete ignorance of the history of the Cumberland Pear, but that he was, according to his own showing, evidently cultivating a variety which was not the true *Beurré Superfin*.

The trials of subsequent seasons have proved, that *Beurré Superfin* is all that it was represented to be,—one of the very best autumn Pears. It is not one of those richly luscious Pears, with a high musky aroma, like the *Seckle* for instance, or *Gansel's Bergamot*, but possesses that brisk, lively, and piquant flavour,

which the Germans truly term "vinous," from the close similarity it bears to their sparkling wines of the Rhine and Moselle.

Fruit inodorous; medium sized; roundish, inclining to turbinated, somewhat uneven and bossed on its surface, and towards the stalk dipping with more or less of a deep concave curve.

Skin thin, considerably covered with patches of thin cinnamon-coloured russet. On the shaded side, the ground colour is greenish-yellow, which becomes lemon-yellow at maturity, and covered with small patches and veins of russet; but, on the side next the sun, little, or none, of the ground colour is visible, and the russet assumes an orange tinge when the fruit has been much exposed to the sun's influence.

Stalk sometimes upwards of an inch long, and sometimes not above half an inch; in the former case, it is hard and woody; in the latter, thick and fleshy, forming a gradual fleshy connection with the fruit, to which it is united without depression.

Eye very small, and closed, having stout, uncurved, tooth-like segments, like that of the *Easter Beurré*, and set in a rather deep, round, and rather uneven basin.

Flesh yellowish white, fine-grained, buttery, melting, and very juicy. Juice abundant, very sprightly, vinous, and sweet, with a delicate and agreeable perfume.

A very superior dessert Pear, of first-rate quality, ripe at the end of October and beginning of November.

The tree is well adapted for garden culture, bears early and freely, and may be grown either as a dwarf bush, as an espalier, or as a pyramid. It succeeds well on the Quince stock. It is very hardy, grows with a spreading habit, and in the early stages of its growth has spiny wood.

This excellent variety was raised by M. Goubault, of Angers, and the specimen from which our figure is taken was received from Mr. Rivers, of Sawbridgeworth.—H.

VITTADINIA TRILOBA.

(Nat. ord., *Asteraceæ*—*Compositæ*.)

A HARDY herbaceous plant, well adapted for making a permanent flower-bed. The colours are not what is termed gay, being a white ground, tipped with pink, very similar to the common Daisy. It flowers very abundantly throughout the entire summer, and appears to be unaffected by drought, or rain. Its glossy green foliage, and its compact habit of growth (about nine inches high), make it a very admirable object for either bed or border plant, requiring no further care, after planting, than keeping it clear from weeds. It will remain in the same situation for several seasons without removal. It is included in the genus *Brachycome* by some botanists.

PHYGELIUS CAPENSIS.

(Nat. ord., *Scrophulariaceæ*. Tribe, *Cheloneæ*.)

AN excellent new bedding-plant, producing its pentstemon-like flowers in great abundance, of a bright brick-red colour externally, and internally yellow and red. The habit of the plant is very good, growing from twelve to eighteen inches high: it throws its flower-stem well above the foliage. I have no doubt but it would make a fine pot plant, of easy management, and would contribute greatly to the beauty of a conservatory or greenhouse. It propagates readily from cuttings, and will do well treated as Fuchsias.

ADENOCARPUS INTERMEDIUS.

(Nat. ord., *Fabaceæ*. Tribe, *Cytiseæ*.)

A NATIVE of the mountains of Sicily, consequently quite hardy in this country. This is a fine object for a wall, growing from five to six feet high, producing its pretty orange and yellow Pea-shaped flowers in great abundance, continuing in great beauty from the beginning of May to the end of July. No garden should be without this charming shrub, which is not surpassed by any species of this useful order for gaiety of colour and long continuance of flower. *Solanum jasminoides* makes an excellent neighbouring plant, when the soil is warm and dry, as it flowers about the same time; and its snowy-white flowers contrast well with the gay, warm colours of the Adenocarpus. The knife should be used very sparingly, and every shoot neatly nailed to the wall.—HORTULANUS.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 39.)

[D. signifies that varieties so marked are to be used only for the dessert; K., for kitchen purposes; and C., for cider-making. Those marked K.D. are applicable either to kitchen or dessert use.]

APPLES.

HAWTHORNDEN, K.—Large, flat, ovate, and angular. Skin delicate yellowish-green, covered with bloom, a red blush next the sun. Stalk slender, half an inch long. Eye small, nearly closed. Flesh white, juicy, and pleasant. An abundant bearer. September to January.

HAWTHORNDEN, NEW, K.—The appearance of the fruit is very much the same as that of the old Hawthornden, but is much more solid and briskly flavoured. It also keeps longer, and the tree has a more robust and vigorous growth. December to January.

Herefordshire Golden Pippin. See *Golden Pippin*.

Herefordshire Pearmain. See *Royal Pearmain*.

Hicks' Fancy. See *Early Nonpareil*.

HOARY MORNING, K. (*Dainty, Downy, Sam Rawlings*).—Large, roundish, somewhat flattened, and angular. Skin yellowish, marked with broad, pale-red stripes on the shaded side, and broad broken stripes of beautiful red on the side next the sun, and covered with a fine thick bloom, like thin hoar frost. Eye very small. Stalk short. Flesh yellowish white, tinged with red at the surface under the skin, brisk, juicy, rich, and slightly acid. This is a beautiful and very excellent kitchen apple. In use from October to December.

HOLBERT'S VICTORIA, D.—Small and ovate. Skin yellow, covered with pale grey russet. Eye small and slightly open. Stalk short. Flesh yellowish, firm, very juicy, vinous, and aromatic. An excellent dessert apple, of the first quality. December to May.

HOLLANDBURY, K.—(*Hawberry Pippin, Horsley Pippin, Kirke's Admirable*).—Large, roundish, flat at the ends, prominently ribbed. Skin greenish yellow, beautiful bright red next the sun. November to January.

HOLLAND PIPPIN, K.—Large, roundish, and flattened. Skin yellow, inclining to green, dull red next the sun. Stalk short, thick, and deeply set. Eye small, in a slightly plaited basin. Flesh pale yellow and pleasantly acid. November to March.

Hood's Seedling. See *Scarlet Pearmain*.

HORMEAD PEARMAIN, K.D. (*Arundel Pearmain, Hormead Pippin*).—Medium sized, ovate conical. Skin of a uniform bright yellow. Eye large, closed, and set in a shallow, irregular basin. Stalk very short and stout, inserted in a deep cavity. Flesh white, tender, very juicy, and pleasantly acid. An excellent dessert apple. In use from October to March.

Horsley Pippin. See *Hollandbury*.

HUBBARD'S PEARMINE, D.—Small and conical. Skin covered with thin russet, sometimes without russet, and thin yellowish green. Eye small and closed. Stalk short. Flesh yellow, firm, sugary, richly flavoured, and aromatic. One of the best dessert apples, deserving extensive cultivation. November to April.

HUGHES' GOLDEN PIPPIN, D.—Small, round, compressed at the ends. Skin yellow, spotted with green, and russetty. Stalk thick and short. Eye small, in a hollow plaited basin. Flesh yellow, rich, sweet, and agreeable. A first-rate dessert apple. December to February.

Hunt's Nonpareil. See *Nonpareil*.

INGESTRIE RED, D.—Small, oblong ovate. Skin bright yellow, tinged with red next the sun, speckled with dots. Eye in a round, wide basin. Stalk short and slender. Flesh pale yellow, of very rich, juicy flavour, resembling

the Golden Pippin. One of the best autumn apples. September to November.

INGESTRIE YELLOW, D.—Small, ovate oblong. Skin deep bright yellow all over. Eye small and shallow. Stalk slender. Flesh tender, and very juicy when first gathered. A good bearer. October.

IRISH PEACH, D. (*Early Crofton*).—Medium sized, roundish, somewhat flattened and angular. Skin yellowish green and dotted with brown in the shade, dull red next the sun. Eye large and closed. Stalk short. Flesh white, tender, juicy, and richly flavoured. This is one of the best summer dessert apples, and is ripe in August.

Irish Pitcher. See *Manks Codlin*.

Irish Russet. See *Sam Young*.

Ironstone. See *French Crab*.

ISLE OF WIGHT PIPPIN, K.D.—Medium sized, round, and a little flattened. Skin fine rich yellow, and covered with thin grey russet on the shaded side, and of a rich orange and red on the side next the sun. Eye open. Stalk short. Flesh of a fine yellow colour, firm, juicy, and pleasantly acid. September to January.

JOANNETING, D. (*Juneating, White Juneating, Owens' Golden Beauty*).—Small, round, and slightly flattened. Skin light yellow, with a red blush next the sun. Eye moderately sunk. Stalk long and slender. Flesh crisp and pleasant. A good bearer. July to August.

Jones' Southampton Pippin. See *Golden Winter Pearmain*.

KEDDLESTON PIPPIN, D.—Small, conical, and regularly formed. Skin of a uniform yellow colour, with veinings and specks of russet. Eye half open, set in a shallow plaited basin. Stalk short. Flesh yellowish, crisp, very juicy, sugary, and aromatic. A first-rate dessert apple. November to March.

KENTISH FILL BASKET, K. (*Lady De Grey's, Potter's Large*).—Very large, roundish, and angular. Skin yellowish green, with a brownish red blush next the sun, streaked with darker red. Eye large, in a deep irregular basin. Flesh juicy, sub-acid. November to January.

KERRY PIPPIN, D. (*Edmonton Aromatic Pippin*).—Medium sized, oval, flattened and wrinkled at the eye. Skin pale yellow, tinged and streaked with red next the sun. Eye obliquely inserted in a plaited basin. Stalk large. Flesh yellow, firm, crisp, and very juicy, with a rich sugary flavour. One of the best dessert apples. September to October.

KESWICK CODLIN, K.—Large, conical, irregularly angular. Skin greenish yellow, with a blush tinge next the sun. Eye large, deeply set. Stalk short, much depressed. Flesh yellowish white, juicy, and pleasantly sub-acid. An excellent bearer. August to September.

King George. See *Borsdörffer*.

King of the Pippins. See *Golden Winter Pearmain*.

Kirke's Admirable. See *Hollandbury*.

Kirke's Golden Reinette. See *Golden Reinette*.

Kirke's Lemon Pippin. See *Lemon Pippin*.

KIRKE'S LORD NELSON, K.—Large, roundish. Skin smooth, pale yellow, streaked all over with red. Eye open. Stalk short and slender. Flesh yellowish white, sweet and juicy, but lacks acidity. November to February.

Knight's Codlin. See *Wormsley Pippin*.

Knightwick. See *Court of Wick*.

Lady De Grey's. See *Kentish Fill Basket*.

LAMB ABBEY PEARMAIN, D.—Medium sized, conical, slightly flattened at the ends. Skin yellowish green; orange, streaked with red, next the sun. Eye rather large, deeply sunk. Stalk short. Flesh yellow, greenish at the

core, crisp, juicy, sweet, and aromatic. One of the best dessert fruits, and "keeps well without shrivelling." December to April.

Lancashire Crab. See *Minchall Crab*.

Leathercoat. See *Royal Russet*.

LEMON PIPPIN, K.D. (*Kirke's Lemon Pippin*).—Medium sized, oval. Skin yellowish green, turning to lemon-yellow. Eye small. Stalk short, with a fleshy protuberance growing on one side. Flesh firm, brisk, and pleasantly acid. October to April.

LEWIS' INCOMPARABLE, K.D.—Large and conical. Skin deep lively red, streaked with red of a darker colour; but on the shaded side it is deep yellow, faintly streaked with light red, and strewed with numerous minute dark dots. Eye small and open. Stalk very short. Flesh yellowish, firm, crisp, and juicy, with a slight musky flavour. A large and handsome apple, In use from December to February.

(To be continued.)

QUERIES AND ANSWERS.

ISABELLA GREY ROSE—SAVING LATE-BEDDED GERANIUMS THROUGH THE WINTER.

"Can you tell me anything about a Rose called *Isabella Grey*? I bought it believing it to be a *Tea-scented* Rose, capable of pot culture. It shows every disposition to take after the longest-jointed of the *Noisettes*, and has made no attempt to flower.

"I hope you will give us an article on keeping old Scarlet Geraniums. I have read everything ever written to THE COTTAGE GARDENER about them, and can do very well with them, if taken up early. But those of us who cannot make up our minds to spoil our autumn gardens, would be very glad to know if anything can be done with them,—when taken up as late as the middle of November,—if they have not been touched by the frost. I ask on behalf of those who, like myself, have not room for them in a greenhouse stage, or in pits. Under the stage, in my greenhouse, they always die of mildew, when taken up so late, though I keep them as dry as I can. I have heard of tying them in bundles, and hanging them up by their heels against the wall; of burying them completely in dry sand; of shutting them up dry in boxes, &c. No doubt some of your readers have succeeded with these plans, if they are practicable; but I have never seen any successful attempts mentioned in your pages.

"In my garden, where I have bedded and proved many of the white-leaved Scarlet Geraniums, the newer sorts stand thus, in order of merit:—

"1. *Alma*. Decidedly the best, both as to habit and flower, which stands all weathers.

"2. *Countess of Warwick*. Good habit; fine scarlet truss.

"3. *Annie*. Fine foliage; a shy grower; flowers shed their petals in a bright sun. It is a desperate seeder.

"4. *St. Clair*. Very fine flower-truss, of bright rose, which lasts a long time without the centre becoming shabby.

"5. *Culford Beauty*. A shy grower; flower burns in the sun like *Mountain of Light*.

"I have also two or three of the red-zoned sorts, as *Fountainebleau*, *Attraction*, and *Burning Bush*. The last is the only one I have seen which preserves the red zone well when planted out. I have also had *Hendersonii*, *Perfection*, *Bijou*, and *Julia*, planted out, but not early enough in the season to judge them fairly with the others."—C. W.

[The Rose, *Isabella Grey*, does better in a pot than any other way. It is a strong Rose of the kind, but not one-half so strong as some of the Roses grown for exhibition. *Blairii* No. 2 is four times stronger, and where is there a finer pot Rose?

The first great difficulty in keeping old bedding Geraniums over the winter is, in getting people who will attend to them. They can be kept ten different ways equally well, if they are attended to. Nine persons out of ten keep them on the principle of "out of sight, out of mind." They put them "up" for the winter, and then chance them. But that would not do for Apples, or Potatoes, or any other rough fruit or vegetable. Those who keep such things best, look them over at stated intervals;

and, if you could follow them, and see to them every other Friday, there is little reason to fear, even if you left them out till Christmas, provided the frost did not hurt them before that period. Fourteen days is the longest period it is safe to miss looking at the stored Geraniums. We keep very many of them in different ways, but examine every plant once a-week. Wednesday is our day, and we never miss them, or if we do, at chance times, the first thing we dream of on Wednesday night, is ruination to the whole lot, in some shape or other. The next principal rule is, if you cut any one of the shoots, they must all be cut on that plant down to the hard wood, which is the safest way for all who cannot see at one glance what is the matter with them, and how to remedy the matter when it is bad. With good looking after, the whole of the shoots will keep just as well as the bottoms. We keep some that way to get cuttings from them in the spring, but we cut off every leaf,—not strip them off; then we take off all the stipules,—every leaf or joint has two stipules, two short plain blades at the bottom of the footstalk, but on each side of the joint. Nothing brings on the damp sooner than a decaying stipule. Narrow boxes, about six inches deep, nine inches wide, and two feet long, are the handiest things, to move them in and out, in fine weather; to take them from the frost when it is strong, and then be covered over; but to be uncovered when the frost is gone, and to be taken to the open air the first dry day after a frost. Last Christmas our boxes were out many nights.

We wrote, in THE COTTAGE GARDENER, six or seven years back, how a person kept Scarlet Geraniums in balls of moss kept a little damp, and hung up in different places. Every way you name is good, with good management. Pots are the worst things to keep them in, as they either get too dry or too damp.]

WINTERING GERANIUMS.

"In a number of the *Gardener's Chronicle*,—which I accidentally took up at a friend's house,—I saw an extract from a work lately published by Mr. Glasse, in which he recommends, for keeping Geraniums through the winter, to pull them up on a dry day, shake out the earth from their roots, cut them down to three or four joints, strip off all the leaves, and place them in a dry, cold frame, with their roots downwards, in dry sand or fine ashes, and buried four inches in this material. I am anxious to try this, which will, if good, save an infinity of trouble; and shall deem it a favour if you will say if you approve of the plan. If so, as my pit is a deep one, I could put two layers of plants, the one over the other, with a stratum of sand or ashes, provided the upper layer be four inches below the surface. Also, if I could not put Fuchsias at the bottom of the pit, stripped of their leaves, but laid on their sides."—N. A. P. B.

[The people of the *Chronicle* are all so unpractical, that one is never sure of following what they write from correspondents, or from other people's books. Take your own case as an instance. You read of "pulling up" Geraniums for preserving; that is quite enough for a practical to condemn the whole story. Many of the kinds would not keep in a good viney, if they were pulled out of the ground. We could name a gardener who pulled up all the Geraniums of a great establishment, and lost some thousands of them that winter, in the best hothouses in the country. When a plant is "pulled up," the breaking of the roots is not the greatest damage,—it is the strain and the internal breakages among and between the fibres and the fleshy parts of plants, which do the great mischief, the effects of which are not seen for weeks afterwards. Oaks, Elms, and Hollies, as well as Scarlet Geraniums, have been killed by the score,—in the moving or transplanting,—by this "pulling," through the ignorance of the planters. A glass frame over buried Geraniums is not half so good as a washing-tub. See what Mr. Beaton says in another page to-day.]

before any damage is done by frost, or will a little frost do no hurt?"—COELEBS.

[A damp cellar is a bad place to keep any kind of plants or roots in. A slight frost is not half so bad for a dry plant as twenty-four hours in a damp place. The only way to keep Salvias and Scarlet Geraniums in a damp cellar, is, to cut down the former to the surface of the ground, and put the roots in a wooden box, with dry earth or sand amongst them, and over them, to the depth of two or three inches. All the green wood of last year should be cut off the Scarlet Geraniums, and the roots planted also in wooden boxes, in moist earth, and that covered an inch or so with something perfectly dry, to keep down the moisture from the roots and earth. Dry sand is the best. In fine weather these boxes should be taken up out of the cellar, to stand out in the sun and air, and to get a little rain now and then. Do not go to the damp cellar, except during hard frost. Light is not essential to any plant while it is at rest, if it has no leaves; but leaves on a plant in a dark place do a great deal of harm to it. Therefore, when a plant is put into a dark place, to remain there for weeks and months, the leaves should be taken off.]

ORNAMENTAL PLANTING BEFORE A SOUTH WALL.

"I have a brick wall near my flower garden, which I shall thank you to tell me how to turn to the best account, in the way of beauty. It has a south-east aspect, and is about seven feet high. It is well sheltered, and in a warm situation in the north of England."—EMMA.

[The first thing we would do, would be, to make a good border for fine plants to grow against it, four or five feet wide, and no deeper next the wall than the foundation of it; or, if the foundation is more than twenty inches deep, we would stop there. There is no greater mistake than to make a border deep at the wall, no matter what is to be planted there. Grapes and Tea Roses are as one at that point. Give each of them just eighteen inches of good soil at the wall, and not over two feet at six feet from the wall. A drain under the two feet, and at six feet from the wall, if the bottom is wet. Any good, light soil, from a common, or hedge bank, with a little very decayed dung mixed with the top spit, would make a border complete for anything not in the fruit way. And now we must consult you. Are you partial to ribbon planting? If so, that is your border. If the wall was entirely covered with Ivy, what a noble surface to plant a row of the Scarlet Emperor Geranium against, for a back to anything. Tea Roses ditto, without Ivy. Choice half-hardy plants ditto. But, without your directions, we cannot go farther just yet.]

WINTERING YOUNG BEDDING PLANTS.

"In the month of August, I had two hotbeds made of stable-dung, and placed two-light frames on each. I have successfully struck Verbenas, Heliotropes, Pansies, and Geraniums therein, and they are all in their beds growing fast; in fact, I think too fast. Shall I be likely to keep them through the winter in those hotbeds, or must they be removed to some cooler place, where their growth will be checked, whilst they are preserved from damp and frost?

"My *Tom Thumb* and *Flower of the Day* Geraniums are nice little plants, with beautiful roots. For the preservation of them, I have placed a two-light frame on the ground, have filled about a third part of it with sawdust, and have plunged the pots containing the Geraniums into it. Will this be sufficiently warm for them? Ought I to have put anything under the sawdust, to prevent the damp from rising? If so, what?

"Writers of floricultural works tell us to take charge of flowers in-doors, but I have so many little plants, in the shape of boys and girls, that I cannot spare a room for the purpose.

"All my flowers must, therefore, be kept out of doors, and I shall, indeed, be thankful, if you will tell a dull scholar, very plainly, what he should be doing."—M. W. F.

[You are a good propagator at all events. Oh! these hotbeds. How they do fill one's place, and how we like to have our hands full,—full of practical experience, full of enthusiasm, full of stove plants, and full of fun in looking after them. But how could you have a hot bed in August, when we could not get a suffi-

WINTERING GERANIUMS IN A CELLAR.

"In wintering Scarlet Geraniums, and red, white, and blue Salvias, in a cellar, please to state if they should have any light. If not, should the light be excluded at the window, thereby causing no fresh air in the place; or by a sack, or something of that nature, thrown over the plants? Should all the above be cut to the lowest stems, or be left as entire as possible? The cellar is quite free from frost, but rather damp. Do you think there is any cause of fear from this? Should they be taken in

ciently cool one for the same thing? All our cutting-pots then stood half plunged in cold cinder ashes, and every cutting took, and whenever the roots showed out through the bottom of a pot that pot was turned right out in the open air, but away from the sun; and there hundreds of such pots got a good pincher on the 9th of October, when the frost came. The leaves of some Heliotropes were blackened; but that was the best night of the season for us, it stopped a hardy and very sure young growth just in time to make our young stock the best we remember to have had for years. One of your Verbena-pots will want more looking after than two pots of our nipped Heliotropes. What would the boys and girls be fit for, if you had brought them up so tender as you did these bedders? But, with fair attention, you will get them very comfortably over the winter. You will have to be over them on many days. Ours are so hardy, that they will stand anything short of frost. The least puff of cold wind will hurt yours till after Christmas. But your greatest enemy will be damp. Some contrivance to put hot ashes, or cinders, or hot water in, to dispel the damp at times, is an excellent remedy.]

LEUCOPOGONS—SHOWY BED—BOUVARDIA LONGIFLORA VERA.

"There is a plant I should be much obliged to you if you could give me some information about,—viz., *Leucopogon angustifolius*, or *Cunninghamii*. It is a great pity it is not more generally known, as it is coming into flower now; and its white, scented flowers are very desirable late in the year. Can you tell me whether it requires any particular treatment, except keeping up good drainage?

"Also, allow me to recommend to your notice a bed, for brightness of colour, I should think, almost unequalled,—viz., the double Marigold and *Commander-in-Chief* Geranium. You may object to the Marigold as common, but you cannot get the gold, or orange colour, if you like to call it so, anywhere else. Properly arranged the colour is unequalled.

"Also, please to tell me, whether the seeds of *Bouvardia longiflora vera* produce plants with flowers white, and true to the parent?"—L. S. D.

[These *Leucopogons* are touchy plants, and many fail to do much good with them. The new white seedling Epacries take the place of the white bearders. The same soil and treatment as for Epacries will do for them; but they are much more difficult to manage.

The deep scarlet *Commander-in-Chief* and the bright yellow must look well on a green ground.

The white *Bouvardia* is sure to come all white from seeds. What a fine thing it is!]

PEACHES UNDER VINES—VENTILATING WHERE SASHES ARE FIXED—PRUNING OLD PORTUGAL LAURELS.

"I will thank you to advise me in the following matter:—I have a south wall, covered with Peaches and Nectarines, ten feet high below the coping. I want to grow a few Grapes, and to put up a house against the above wall, to grow them in. I want to do it in the cheapest manner I can, to be useful; and I want the whole of the glass fixed, if it can be done. Hartley's rough patent for the top, and sashes of 16 ozs. for the fronts, fixed. The garden is surrounded with high trees, so that in hot weather, for a few hours in the day, it is very hot against the wall; therefore, it is the ventilation that I feel a difficulty about. I should like it ventilated properly for the health of the trees, yet as economically as possible. As I shall not want to force, I propose heating it with a flue, and admitting air just above the flue, merely to keep out frost. But how can I manage the top? Will sash-bars two inches by three inches do for one-eighth thick and fifteen inches apart? Will the Peach be likely to suffer by growing Grapes up each rafter fifteen inches distance.

"My chief inquiry is, what space for ventilation at the top will answer my object? How must I do it? and will it be as well to have lights to slide up and down?

"I have a Portugal Laurel hedge that has grown out of bounds. I want to reduce it very much. Will it bear having all the foliage nearly cut away? I can leave one till another year, if that will be any advantage. And when is the best time to do it?"—J. B.

[You will thoroughly ruin your Peach trees by training

Vines up the glass fifteen inches apart,—that is to say, if you mean your Vines to be any height in the house. If you think of giving the Vines nearly the length of your glass, you should plant your Vines from four to six feet apart: then there may be a chance for your Peach trees. You say nothing whatever of the intended width of your house, though upon that much of the sizes of the sash-bars must depend, to carry 16-oz. sheet glass. If you were content with a narrow house—say, seven feet wide—you might bring studs every three feet from the wall, leaving just a little to the fruit; each stud being fifteen inches beyond the wall, and joined there to a ridge board, to receive one end of your sash-bars, whilst the other end would rest on a stout wall-plate rail in front eighteen inches from the ground, supported by a wall, or so many posts of wood, to support the rail.

A moveable board at top, all the way, moved with lever or pulley, would give you air all the way, and give you more room than if your glass went right up to the wall; and then in front, if the wall plate was supported on posts, a board could go all the way, moveable in the same manner; and if brick or stone was used, ventilators could be left in the wall. If you proposed a width of twelve or fourteen feet, then you might have a hipped roof of glass at top, of two or three feet in width, and part made to open; or a slanting roof, like the last, but eighteen inches or two feet in width to the ridge board, and that width made of glass shutters, half of which—better if all—should open when wanted. Your front wall plate might be two feet in height, or a foot more if you choosed, and ventilated below; and thus you would escape all necessity for front sashes. If you should decide upon a common lean-to, and yet have the roof fixed as a whole, you must have a swinging ventilator for every six feet in length. For a width of fourteen feet, with rafter sash-bars two by three inches, you would require an iron rod longitudinally along the middle, and an upright support every ten feet.

Cut your hedge as far back as you please, just as growth is showing signs of moving in the spring.]

SIZE OF BED FOR A PILLAR ROSE.

"What ought to be the diameter of a circle for growing Pillar Roses,—one plant to be in each circle? Will the following Roses make as good pillars on their own roots as budded ones:—*Brennus*, H. W.; *Paul Ricaut*, H. B.; *Coup d'Hebe*; *Charles Duval*; *Madame Plantier*, H. W.; *Blairii No. 2*? What depth of soil will they require? Will two feet be sufficient? The subsoil is retentive clay."—PAUL RICAUT.

[It is quite time enough to talk about the diameters when the Pillar Roses are four years planted. No good gardener, now-a-days, makes the holes, or borders, for his choice things wide enough at first, so that the roots may have it fresh and fresh, like the old woman's pennyworths of salts. Two feet wide is quite large enough to begin the strongest Rose; then, four feet the second or third year; and the seventh year the circle ought to be six feet across; but, after filling it with all good things, it may be again reduced on the top by turf, to two feet or three inches. All the Roses you name, and most other Roses, which are strong enough for pillars, do far better, and last much longer on their own roots. The depth on your clay bottom should not exceed eighteen inches.]

HEATING A PROPAGATING BOX—FORCING STRAWBERRIES.

"I have lately had a greenhouse erected, and fitted with hot water; and, having no convenience for a hotbed, have adopted the following plan:—I have had a box made twelve inches wide, and twelve feet long, and the return-pipe to the boiler laid at the bottom of the box. I propose to fill the box with sawdust or earth, and sink the pots or pans in it. Do you think it will answer, to raise seeds and cuttings?

"I want to have a few early Strawberries. I have planted some good, strong runners in pots (24's) about three weeks ago,—*Black Prince* and *British Queen*. What is the best mode of treating them, and when ought they to be placed in the house?"—A SUBSCRIBER.

[There is no doubt that your proposed box will answer well, if you do not attempt to grow or raise in it things requiring much heat. Of course, you are aware that it will not retain heat long after the water gets cool; but wood and sawdust will do it longer

than any thing else. We presume your box will be twelve inches deep, or thereabouts; and, also, that you will use chiefly small pots—say, six inches deep—for plunging in it. If so, we would advise you to cover your pipe over the bottom of the box, to the depth of six inches, or so, with crocks, pebbles, &c., placed as open as possible, so that the heat may get easily to the bottom of the pots, whilst the sawdust above will prevent it escaping freely.

If you have read what we have said, in late volumes, of early-forced *Strawberries*, you will have perceived, that, to have them very early, the pots must be crammed with roots, and the buds getting ripe by this time. Yours will be growing freely as yet, and, if the weather continue open, will grow ever so long, as the result of the large pots you have given them. Potted in the middle of September, the plants would have been sooner ready if you had put them into 48's, instead of 24's. Secure the pots now from excessive wet, and also from frost. If you have such a thing at liberty as an odd light of a frame, protect them with glass in winter; but give plenty of air, unless when the weather is very frosty; and place in a light, airy part of your greenhouse, from the middle to the end of March. Do not let them get very dry all this time, but let them be dryish, instead of wettish, until you see the flower-buds showing. Give more water then, but not over much, till the truss is rising freely, and showing bloom-buds open.]

THE APHIS.

THE name *aphis* means in Greek "a bug," and is derived from a word which signifies to suck a plant; and the name *aphides* may be regarded as its plural. The *aphides* (or, as they are sometimes termed, the plant-lice), although individually insignificant, are vastly more multitudinous and very much more generally and minutely diffused than any other class of insects. It has been assumed by eminent naturalists that the number of the species may exceed 1,500, although only about seventy species have been accurately described and scientifically determined; as almost every species of plant, from the stateliest forest tree to the minutest grass, is believed to be infested by an *aphis* peculiar to itself,—although many species of this insect feed on a wide range of different plants. Their astounding fecundity exceeds that of any other animal, not excepting the fish,—and is effectuated in a manner otherwise unknown in animal physiology. Bonnet, the naturalist, selected a plant-louse which he had seen the moment before born of a mother without wings, and placed it upon a leafy branch which he had carefully ascertained to be free from the presence of any other *aphis*. He completely isolated this branch from the atmospheric air by an inverted glass vessel, and, commencing on the 20th day of May, watched this insect with a microscope hourly, from five o'clock in the morning till nine at night, till the first of June, when, having cast its skin four times, it produced a young living *aphis*. Within the following three weeks it thus produced no less than ninety-five *aphides*. Bazin discovered that plant-lice produced young without pairing, a fact which was corroborated by the researches of Reaumur and Trembley. Bonnet repeated his experiments, and found that at least five generations of the Elder plant-louse, and nine generaions of the Oak plant-louse could be produced without pairing. Lyonnet confirmed these observations, and Duvan watched the production of eleven generations, without pairing, within seven months. All the insects of these successive generations were females, but in autumn, when their presence became essential, and not before, some males were produced.

Let the reader pause to contemplate the startling gross result of this fecundity. If we reckon, with Bonnet, an increase of ninety females, each generation, the progressive increase will stand thus:—

Aphides.

First generation	90
Second ditto	8,100
Third ditto	729,000
Fourth ditto	65,610,000
Fifth ditto	5,904,900,000
Ninth ditto	350,970,489,000,000

Dr. Richardson estimates the increase of nine generations at a still greater number; but the above is quite sufficient for the human mind to grasp, and to account for the rapidity with which a field of Turnips or Cabbages becomes converted into a field of *aphides*. Many cases have been known of their sudden mi-

gration, by myriads, from one place to another. They thus suddenly appear and disappear in the Hop grounds of Kent and Sussex. The Hop fly (*Aphis humuli*), indeed, generally disappears shortly after midsummer. In two years, within human memory, this insect has destroyed the whole Hop crop.

"The mother plant-lice," says the *Rural Cyclopædia*, "after a full generation of young *aphides*, becomes smaller and flatter than before, and in probably all instances very soon dies. Some species, perhaps nearly all the species of *aphides*, pass the winter only, or chiefly, in the egg state, all the perfect insects dying about the commencement of winter, and the progeny of the next year being hatched by the heat of spring. Yet, just as female wasps and female humble bees, after having paired in autumn and survived all the males, find shelter during winter, and remain ready to bring forth a numerous progeny in the spring, as many of the perfect *aphides* pass the winter in sheltered places, and find all the scanty nourishment which they require from the perennial portions of their own proper plants, or from plants of similar character and juices to their own. In Sweden, where the cold of the winter is much more severe than in England, the *Aphis pini* lives through the winter on the branches of Pines, and both in England and on the Continent females of the several classes, which feed on ligneous plants, may, by any careful and minute observer, be seen, in the middle of winter, in the chinks or cracks of the branches of trees." "Towards the end of December and the beginning of January," says Reaumur, "I have seen several plant-lice on the buds of young shoots on a Peach tree, after some days of severe frost. These were wingless females, very plump, and full of young. Even species, whose annual plants are herbaceous, and either annual only in cultivation or perennial only in the roots, seem to have little difficulty in temporarily accommodating themselves even in summer upon other plants, or in finding during winter all the scanty nourishment which they require."

Flocks of insectivorous birds, and myriads of other insects, find in these *aphides* their natural food. The ladybirds, which sometimes are met with in clouds on the Kentish coast, devour them, in both the perfect and the larva state, depositing their eggs in the midst of their groups. The larvae of the (*Syrphidae*) wasp-flies feed on the *Aphis brassica*, which, small as it is in itself, is infested by a parasite—the *Ichneumon*, or gauze-winged fly (which deposits an egg within its body, the maggot from which devours it); whilst the earwig lives on it almost entirely.

We have, doubtless, in Tasmania, many aphidivorous birds and insects to supply the place of these, and which, it may confidently be anticipated, will ultimately effect their partial extermination. In the interim, we believe it will be wise to follow the example of the Cabbage and Turnip growers at home, who never allow their ravages to prevent the cultivation of such crops. After all, this pest is not nearly so bad as the locust of Africa, the white ant of the tropics, the Hop fly, the Turnip beetle, or the larvae of the cockchafer, or the wire-worm at home; or the Hessian fly in America. In England the *aphides* have very seldom been troublesome two consecutive seasons.—(*Hobart Town Journal*.)

EIGHT-BAR HIVES versus SEVEN-BAR HIVES, AND WHAT ARE THE BEST DIMENSIONS FOR EACH.

I HAVE to thank Mr. Tegetmeier for his polite appreciation of my communications, and for the readiness with which he favours myself, in common with the readers of *THE COTTAGE GARDENER* generally, with the results of his aparian experience. Although he certainly differs from me, I think, if he will allow me to remove one or two misconceptions, the difference will turn out to be more apparent than real.

In the first place, it is not the size (i.e. the capacity) of bee-boxes which I have called in question, but whether broad and shallow boxes are as well adapted as narrower and deeper ones for the collection of honey, and the general well-doing of their inhabitants. If he will refer to the measurements of my hives, he will find that both eight-bar and seven-bar boxes are nearly the same size, by which I mean that there are about the same number of cubic inches in each. In fact, after allowing for the space occupied by comb bars, the seven-bar box is rather the larger of the two.

In the next place, he appears to have misunderstood the result

of my experiment, which is, as far as it goes, somewhat in favour of the seven-bar hive.

I have never seen the "greater concentration of heat in winter" claimed as belonging to the eight-bar hive; in fact, I am quite of opinion, as I before stated, "that heat appears better concentrated in the seven-bar box, which on that account would seem better adapted for breeding than broad and shallow boxes."

He also misunderstands me on another point. I should be very sorry to commit myself, by saying that bees would *always* follow a given plan under the same circumstances. I merely stated their general practice as far as it had come under my observation.

Our greatest difference appears to be with regard to the best dimensions for seven-bar hives; but even on this point I am in doubt. Are Mr. Tegetmeier's boxes 12 inches, or 11 $\frac{1}{2}$ inches square? If they are twelve inches square, as we must infer from the wording of his letter, he has altogether departed from the size prescribed by Mr. Golding, whose authority he quotes. If only 11 $\frac{1}{2}$ inches, he appears to have experienced the inconvenience from supernumerary combs, which first drew my attention to the subject.

The last part of Mr. Tegetmeier's letter has much interested me. He therein describes the manner in which he stocked an observatory hive, which happens to be the identical mode adopted by myself in 1852, and continued yearly for stocking a unicomb hive, constructed with moveable bars for the purpose. Will Mr. Tegetmeier kindly state, if his observatory hive is also unicomb, and, by so doing, oblige—A DEVONSHIRE BEE-KEEPER?

UNIVERSALITY OF GRASS.—How deliciously sleeps the grass in the moonlight, and how joyfully it laughs in the radiance of the sun. There is no place which it will not beautify. It climbs up the steep mountain passes which are inaccessible to man, and forms ledges of green amid the rivings of the crags: it leaps down between steep shelving precipices, and there fastens its slender roots in the dry crevices which the earthquakes had rent long ago, and into which the water trickles when the sunbeams strike the hoary snows above. There it leaps and twines in the morning light, and flings its sweet, sweet laughing greenness to the sun; there it creeps and climbs about the mazes of the solitude, and weaves its fairy tassels with the wind. It beautifies even that spot, and spreads over the sightless visage of death and darkness the serene beauty of a summer smile, flinging its green lustre on the bold granite, and perfuming the lips of morning as she stoops from heaven to kiss the green things of the earth. It makes a moist and yielding carpet over the whole earth, on which the impetuous may pass with hurried tread, or the feet of beauty linger.—*Hibberd's Brambles and Bay Leaves.*

TO CORRESPONDENTS.

BEE-KEEPING (Apprentice Apian).—We recommend you to gain what information you can, as to hives, and management of bees generally, from some of the numerous publications on the subject, as has often been urged to beginners, in THE COTTAGE GARDENER. No general rules can be laid down for all localities; and, especially as respects hives, the *purse* must often enter into the calculation. The plainer and least complicated of these will, most likely, answer your purpose, whether of straw or wood. The great point is convenience, and good protection from cold and damp. We are not fond of straw coverings, as vermin find secure lodgings therein. We have seen straw hives coated with cement, but are inclined to prefer some kind of moveable cover,—as a box to drop loosely over the hive, and sufficiently thick to keep the wet from penetrating. Still better, is a wooden house, boarded up in front, with doors opening at the back, in which the hives may be ranged,—the bees working through openings opposite to the hives. Or a spare room in a dwelling, or outhouse, is often eligible, a shelf being fixed, with a hole through the wall, in communication with each hive.

BOOK ON BOTANY (J. Sanderland).—Every science, profession, and trade, has a language of its own; and, before you can learn either the one or the other, you must acquaint yourself with the language peculiar to the pursuit you intend to follow. And so it is with the study of botany. Procure "Henfrey's Rudiments of Botany," published by Van Voorst, and then you will be better able to interpret more advanced works.

NAMES OF FRUITS—EXHAUSTED LAWN (A Constant Reader).—Your Apple is *Gloria Mundi*, and the Pear *Duchesse d'Angoulême*. Your turf is exhausted, and may be easily renewed by proper treatment. Give it a good top-dressing, but not with road scrapings or horse droppings. Get some well-rotted stable or farmyard manure, or the remains of old hotbeds. Mix that well up together with mould, or road scrapings, and top dress your lawn with it now, or any time next month. In spring, procure a mixture of grasses from any of the seedsmen advertising in our pages, composed of the following ingredients:—*Yellow Oat Grass*, 1lb.; *Crested Dogstail*, 6lbs.; *Meadow Fescue*, 3lbs.; *Sheep's Fescue*, 2lbs.; *Perennial Rye Grass*, 10lbs.; *Wood Meadow Grass*, 2lbs.; *White Dutch Clover*, 4lbs. This is sufficient to sow an acre, so you can get the quantity you think requisite to dress your ground. After you have sown it, harrow it in with a bush harrow, and then run your roller over it.

MILDREW IN GRAPES (A very old Surrey Subscriber).—We know of no effectual remedy for the mildew but flowers of sulphur, and this remedy is effectual, if properly applied. We have seen long-neglected mildew completely removed, by putting each bunch into a plateful of the sulphur and having every berry rubbed between the thumb and fingers. The vigour of the vines should be sustained with liquid manure. Mildew occurs totally irrespective of the gardener. No skill can prevent its occurrence. Do not give your Violets liquid manure, as they are promising well. Thanks for your suggestions, which shall be well considered.

KEEPING PEARS (Rev. J. Buckham).—You will never succeed in keeping Pears in wooden drawers; they are sure to shrivel. The best method of keeping small quantities, is, to procure some large earthenware pans, glazed inside, and to cover them, leaving an aperture sufficient to allow the exhalations from the fruit to pass off. In the absence of a regular fruit-room, you will find this the best way. Keep the pans in a cool, dry place; never wipe the fruit except before serving for dessert; and when the Pears begin to ripen, bring a few at a time into a warm room three or four days before eating them.

BOOK ON ROSES (J. Webb).—Rivers' "Rose Amateur's Guide," published by Longman and Co., will suit you exactly.

PITCHING AN AQUARIUM (A Six Years Subscriber).—We do not think that pitch, used to render a box water-tight, would injure the aquatic animals confined in it. To remove any effluvia, let water stand in it for a day or two, and throw that water away before you pour in that wherein the aquatics are to live.

WOODLICE AND EARWIGS (Preston).—We have repeatedly given directions for trapping them, and there is no new discovery upon the point. Bottles of beer and sugar lure wasps and flies, but not woodlice. Dig along the base of your stone wall, and see if you cannot destroy them there.

DIANTHUS AND SEEDLING GERANIUM (Z. F.).—You had better send us the *Dianthus* again next year, when it is in perfection. It is a great mistake for people to keep things till past their best, and then ask a public opinion on them. Is it a perennial? Send it next time with all particulars. Your Geranium is very pretty.

SIZE OF A POTTING BENCH (Auburn).—Nothing is more handy about a place than a nice potting bench, in a comfortable, dry, warm shed. Make it as long as you possibly can, to hold ever so many plants after potting, before they must be removed. Two feet six inches to two feet nine or ten inches is the proper height for a middle-sized gardener; but for those with very long, lanky legs, or with very short, stumpy, bowed legs, the height must be more or less. For the master or mistress, the height of the dining-table is the best rule, and any width from two to three feet will do. We prefer a capacious potting bench.

FERNS FOR A GLASS CASE—VINES IN POTS (R. S. T.).—*Adiantum pedatum*, *A. cuneatum*, *A. formosum*, *Asplenium chenium*, *A. Trichomanes*, *Gymnogramma leptophylla*, and *Lycopodium Helveticum*. If you mean to keep your ten-foot length of Vine rods, you had better thin out pretty well two-thirds of the smaller buds, which will cause the others to come stronger. Your rods are not extra strong, but, if well ripened, they will produce fruit. When you commence, twist the rod round a few sticks, to cause the buds to break regularly. The *Frontignan* and the *Hamburg* will be best for the first. Let the plants rest as long as possible before starting them. Give them increased temperature gradually, beginning at 45°, rising in ten days to 50°, and, in twenty more, to 60°, keeping them there until the buds are all broke and growing freely. If you can give them bottom heat, 5° more than that, all along, they will thank you for it. See previous volumes.

THE CHAPALI GRAPE (A Subscriber, Bedford).—It will do in a greenhouse, and you can have either the *Black Hamburg*, *Sweetwater*, or *Muscadine*, besides.

CLEMATIS (Sweetwater).—*Clematis montana*, a hardy, ornamental, and rampant species will suit you.

RUSTIC WORK (W. S. S.).—There is no book giving directions for making it. Our correspondent will be obliged by information whether the wood should be barked, and how the joints are to be made, so as to be strong, and yet not very visible.

SILVER SAND (A Country Subscriber).—This is a very pure silicious sand, and therefore, does not cake when wetted. Some sand deposited by the side of streams is nearly equal to it. Sea sand, if thoroughly deprived of salt, by repeated washings, is also nearly as good for potting purposes. Leave the leader of your *Cedrus deodara* unconfined. *Forsythia viridissima* is hardy about London, and to the south of it, but even there it is benefited by being trained against a wall facing some point of the south. If you refer to our indexes, you will find more than one such list as you require.

PRUNING CONIFERS (S. Fixings).—Early spring is the time for doing this.

TOBACCO DRYING (W. R.).—Cut down the plants close to the ground, and dry them gradually, but thoroughly. Then press them tightly into a tub or box, and keep them thus in a dry place. Tobacco thus made answers well for fumigating.

BORAGE (A Darlington Subscriber).—In favourable situations it grows three feet high. If sown now, the plants will bloom next June, and continue in succession for about six weeks. *Salvia nemorosa*, and *Melilotus leucantha*, are good bee flowers.

ADMITTING AIR (L. R. Lucas).—Never directly upon the plants.

MINERAL DESTROYER OF SNAILS (J. B. C.).—Wishes to know what is this destructive mineral mentioned in "Chambers's Journal." We will give an account of it next week.

NAMES OF FRUITS.—In a package received by the North Western Railway Company, without a note accompanying it. The direction card, "Vote for the Hon. P. P. Bouvier," 2. Sam Young. 3. Parsnip Apple. 4. Eyewood. 6. Doyenne Blanche. 7. Achan. 8. Lamb Abbey Pearmain. 9. Flemish Beauty. (G. Y.)—1. Flemish Beauty. 2. Beurre Diel. 3. Clout Moreau. 4. Napoléon. 5. Beauty of Kent. 6. Golden Winter Pearmain. 7. Hormead Pearmain. 8. Kentish Fillbasket. (A. A.)—2. Blenheim Pippin. 3. Yorkshire Greening. 4. Kentish Fillbasket. 5. Winter Greening (French Crab). 6. Golden Reinette (?). 7. Napoléon. 9. Beurre

Rance. The insect is *Cynips quercus ramuli*. (*Mrs. Tettet*).—1. Dutch Mignon. 2. Golden Winter Pearmain. 3. Green Nonpareil. 4. Court of Wick. 5. Not known. 6. Lamb Abbey Pearmain. (*C. G.*).—Your Grapes are very fine specimens of the Royal Muscadine, to have been ripened in the open air and against an east wall.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

NOVEMBER 30th and DECEMBER 1st. GLASGOW. Sec., Mr. R. McCowan. Entries close November 17th.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs., R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

POULTRY IN A VERY CONFINED SPACE.

IT is now a long time since I promised to send you an account of the amount of success I had experienced in keeping poultry in close confinement. A press of business is my only excuse for not redeeming my promise ere this; but I now hasten to do so, and trust my few notes may prove acceptable to some of your numerous readers.

There are, doubtless, many persons, who, like myself, love both flowers and poultry, but, being obliged to choose between the two, prefer the handsome flower-bed, or the useful, though less showy, vegetable garden, to poultry, however beautiful. When I began to keep my feathered pets, I had a beautiful and productive garden, and when I found that hens would really scratch a lovely bed of flowers in pieces,—would root up and devour most of my choice vegetable seed, and play a thousand pranks, adverse to my garden plans,—I began to consider whether it were not possible to keep the birds altogether in confinement. My friends all laughed at the idea, and told me, with grave faces, and prophetic mien, that "it would never do,"—"birds would not lay without a good run," and many other similar sage pieces of advice. However, nothing daunted, I determined to try, and I am now, with your kind permission, going to advise those who have but little accommodation how to keep fowls, not merely with pleasure, but profitably. In the first place, then, on the principle that one ought to get a cage before we buy a bird, I will begin with the house.

If you have a nice coach-house, stable, or other dry and airy outbuilding, not in use, you have a capital place ready made to hand. If not, select the warmest, and driest situation you can conveniently spare, anywhere against the house. Drive into the ground two stout poles (six feet and a half high), about twelve feet distant from the wall, and about twenty feet apart from each other, in a line parallel with the wall. Now, strain wire netting securely along the front and both ends, taking care to leave sufficient room at one end for a door any width and height you like. About two feet from this make a wall either of brick or wood, the same height as the back wall,—say, eight or nine feet, and about three feet and a half from the back wall. In this place, which you have now partitioned off, place nest boxes on the floor, in the most convenient position, either at one end, or along the side close to the wall, and place perches across, from side to side, not higher than three feet from the ground.

Next comes the roof. The most satisfactory method of securing a perfectly weatherproof roof is, to use semi-transparent glass, and for this purpose Hartley's patent rough glass is by far the best. A light, thin tarpaulin, to be used as a curtain to roll up and down, both for the front and ends, will be of very great service; for, in case of wet, or damp winds, especially the east winds, you can draw the curtain down, and the interior of your pen will be not only dry, but warm.

Now you have your house warm, dry, and light, there is but one thing more you can do for the comfort and well-doing of your birds,—that is, cover the floor all over with nice clean sand (river sand, if possible), with plenty of nice little pebbles in it, to the depth of from four to six inches; add a wheelbarrowful

of lime rubbish, pretty well broken, and everything will be complete.

Here let me pause, to add, that if you put a bottle or two of straw in as well, you may keep white fowls, and have the pleasure of seeing them really white.

"But now the house is ready," exclaims the beginner, "what sort of fowls must I keep?" If you want to breed for table purposes, I know none that arrive at maturity sooner, or are more tender and well tasted, than the Dorkings. If you wish to keep them for beauty, you are the best judge of what you like best. If you want eggs, then I must tell you the plain truth, that you must try which sort suits your locality best; and, more than that, you must try which sort you can manage best. For instance, I have kept nearly every variety, all purely bred birds, but I could never get any satisfactory egg account from any breed except the black Spanish. Remember, I am speaking of birds kept confined. Now, Hamburgs have, with many, a good reputation as egg producers, yet I could never get more than three a week from each bird. On the other hand, a friend of mine, who also keeps his birds penned up, affirms quite the reverse of my experience. With him Spanish would not lay; but his Hamburgs never ceased, except at moulting time. So in this case, I say, do not depend upon the advice of others, but try for yourself.

And now, if you have got your birds safely at home, how are you to feed them? Buy the very best kind of food; for, depend upon it, this will be the cheapest in the end. Vary their food as frequently as possible, or the birds will soon begin to pine for a change. Wheat, oats, barley, and buckwheat occasionally, are excellent as dry food. For soft food I have found a mixture of one-third oatmeal and two-thirds bran most advantageous. It must be mixed with boiling water, and may be given to the fowls for their morning meal. If the weather be cold and damp, a large table-spoonful of ground Cayenne may be added, with great benefit to the well-doing of the birds. Another good change of food is to boil potatoes, and break and mix them with meal.

A good supply of soft water, scrupulous cleanliness, and a constant provision of green food, will, with these arrangements, keep any variety of fowls in a state of the highest condition; and a purity and beauty of feather may be obtained that would surprise anyone who has not seen it tried.—WHITE GAME COCK.

EXHIBITORS' DISAPPOINTMENTS AND JUDGES' DIFFICULTIES.

HAVING subscribed to the —— Poultry Show, I went full of expectation that at last my birds would be honoured by the Judges, and that my name would appear in that enviable list of prize-takers, in THE COTTAGE GARDENER. I had watched my birds day by day, as they progressed towards maturity, and thought that at last I had obtained perfection; and, having carefully matched them, and packed them up in their hamper, gave particular instructions at the railway, that they should be carried in a covered van,—as I had previously found, to my cost, that it was no joke to have my birds whizzed through the air at the rate of thirty miles per hour, on the top of a railway carriage.

As I entered the Exhibition room, I remember I felt a slight palpitation of the heart, and a sort of twitching about my mouth; and I have wondered whether any other exhibitor ever felt a similar sensation. I need not say that I made direct for my favourite class, and soon came to a pen with first prize over it. I looked at them, they were not mine. Another, with second prize on it, soon met my eye, but these were not mine either. I looked over the row, amidst commendations and high commendations, but could not find them. I now remembered that I had forgotten, in my anxiety, to get a catalogue,—a catalogue was soon procured. I looked for the number of my pen. A reference soon showed me that they were in an under pen, and, on stooping down to look at them, I saw they had crept to the back of the pen. I tried to poke them out; but it was of no use, the more I poked the more determined they appeared to keep out of sight. Just then, a gentleman, with whom I was acquainted, came up to me, and said:—"Well, Fred., have you taken any prizes?" I shook my head, and said, "I shall give it up." "Give what up, Fred.?" "Why, exhibiting, to be sure, for I do not understand this handicapping. Its all very well in horse-racing, but it won't do in poultry, Harry." "Handicapping; what do you mean by handicapping, Fred.?" "Why, just look here, Harry; see where they have stuck my birds,—in this dark hole here; and here on the top row are the first and second prize pens. I mean to say, my birds have not com-

peted on equal terms with those above, and that is what I call handicapping."

"Well, Fred., I must say it is mortifying. But stay a bit; I see one of the Judges coming this way; let us have his opinion."

Harry.—"Good morning Mr. ——, here is a friend of mine feels much disappointed; his birds have been thrust into a dark under-pen, and you have not noticed them."

Judge.—"I am sorry for it, if they are birds of any merit; and I am afraid he is not the only person in the room who is disappointed. But you must not blame me, I cannot do impossibilities. I have a certain number of hours in which to go through the different classes, and if I were to take out of their pens all those in the lower tier, and to compare them with those above, my work would never be finished. Mr. ——, who has just left me, purchased, at my recommendation, the first-prize pen at the —— Show. The birds there were shown in a single tier of pens. He now (the first time he has exhibited them), finds himself beaten by a pen that was only commended at the same Show at which he bought his, and which he could have purchased at half the price he gave for his. But here it is; his birds are in a lower pen, and the prize birds above. I acknowledge I feel myself in a very awkward position, but it cannot be helped, unless you exhibitors protest against such a system."

Harry.—"I beg your pardon Mr. ——, I think there is another mode which will be more effectual. Exhibitors are so numerous that there would be some difficulty in obtaining a combined effort; but you gentlemen, who act as Judges, have only to say, we will refuse to award the prizes unless the birds in the same class are placed in the same tier of pens."

Judge.—"I am obliged to you for the hint, and I must try what can be done in the matter, as it is extremely disagreeable to us, to award prizes under the system as adopted here, and, I must say, unjust towards exhibitors."

The Judge then bade us good morning, and, at the solicitation of my friend, I resolved to give my birds another chance, by entering them for the great Birmingham St. Leger.—FREDERICK THE FIRST.

POULTRY SALES.

MR. STEVENS commenced his regular sales of Poultry and Pigeons on Tuesday, October 5. As a whole, the fowls were rather poor, the best being a few fair Cochins from the Rev. G. Gilbert, and some good Brahmans from F. Manning, Esq., several of the latter producing over £1 1s. each. The great attraction of the sale was the Pigeons. Mr. Haynes' young Carriers excited brisk competition, and ten of the birds produced more than £1 each. Mr. Bult's Powters were also sold at from 11s. to £3 each, the Blue-pied birds being remarkably fine.

THE CREWE POULTRY EXHIBITION.

THIS Exhibition of poultry was not held this year, as it has been on the two previous occasions, in the Cheese Market, but in the Corn Exchange, Crewe, and we candidly avow our honest opinion, that nothing approaching to improvement was consequent on this alteration. The birds were exhibited in two tiers of pens, and, from the fact of the building being exclusively lighted from the roof, those whose position was unfortunately to be in the under row possessed few advantages. The arrangement, too, would have been manifestly more equalised, had each variety of fowls been exhibited on the same level; but, such not being the case, an upper pen was a decided advantage to competitors. There is another matter that especially arrested the attention of any practised amateur in poultry matters. Even at first sight, the differences of position would have been less obvious, had the lower row been raised even a little from the ground, instead of being actually resting on the plain floor. The pens used were very good (those made by Turner, of Sheffield), and the poultry, as well as the Pigeons, were, almost without any exception, very superior. It was remarked by the visitors generally, that, although the numbers of pens shown had decreased considerably, the quality of the specimens manifested undoubted improvement. The diminution as to the entries no doubt resulted from the present Show being limited exclusively to chickens.

The Spanish were very superior, the young cockerel in the second prize pen being a bird of great promise, as were the pullets in the same pen. They were, however, scarcely enough matured for present competition.

The Dorkings were, as a whole, a good collection. The highest prize was obtained by the Knowsley birds: they were unexceptionable.

The Game classes mustered very strongly, the Black-breasted class being the most meritorious.

Among the Cochins exhibited, were some excellent Silver, Cinnamon, Grouse, and White birds; but, singular enough, the Buffs were not so good a class as heretofore.

Of Brahma Pootras only two pens were entered, but they were decidedly the two best pens in the whole collection.

The Hamburgs were the pride of the Show. There was not an inferior pen shown. The Pencilled were, however, the favourites; and Mr. Archer, of Malvern, swept away all the premiums for Silver-pencilled.

The Polands afforded but little competition, but those shown were superior.

The Sebright Bantams betrayed the same falling off, as to excellence, so universally deplored at most of our late meetings.

The Geese, Turkeys, and Ducks, were, throughout all the classes, decidedly first-rate.

It is worthy of especial remark, that not one single entry was returned for either the Spanish or the Dorking Single Cock class.

The Sweepstakes for the Game Cock class were good, and seemed to visitors the most interesting in the room. The single Hamburg Cock class contained superior specimens of all four varieties.

The Pigeons, throughout, far surpassed anything ever before seen in this district. Every prize was well contested.

Great praise is due to Mr. Margetts, for the energy he evinced in carrying out every arrangement, without any assistance from others, and at his own cost and personal responsibility, "rather than Crewe should not maintain an annual poultry show;" and visitors will, with pleasure, recall to mind, the attention and civility of that gentleman, when labouring under so many disadvantages.

The Judge for poultry was Mr. Edward Hewitt, of Spark Brook, Birmingham; and for Pigeons, Mr. Cotton, of Crewe.

OUR LETTER BOX.

BREEDING SPANISH FOWLS (*A Novice, N.B.*).—If your cocks and pullets are equally good, we would advise you, seeing that the latter are much scarcer than the former, to get an older cock, and put to the pullets. We do not advise you, if you are trying for prize stock, to put a cockerel to pullets. The best food for all fowls is ground oats slaked with water. They should be fed three times a-day, each time as much as they will eat, but not a morsel left on the ground. It is much better for them to be hungry than to be overfed, as, in the former case, they prowl about, and find much natural food, which is very good for them. Some Spanish exhibitors give them a few white peas daily, for a fortnight before showing them. Wash their faces with a sponge and cold water.

ROUEN DUCKS AND GEESE FOR EXHIBITION (*John Choyce*).—If your ducks are good in bill and colour of legs, and shown in condition, weighing 8 lbs. each, they are fit for Birmingham, or any Show in the world. Your geese, at 15 lbs., are not so good, in comparison, as your ducks; but you have plenty of time to make them heavier before the Show.

POULTRY FANCIER'S DIRECTORY (*E. A. S.*).—We know nothing about its publication.

CHICKENS MOULTING.—"Will chickens that were hatched last April moult this year?"—*A CONSTANT READER.*

[It is a difficult question to answer, as moulting is capricious. Chickens of some breeds moult earlier than others,—Dorkings, for instance. Cochins hatched in April will not moult this year; earlier birds will. In all chickens there is a process akin to moulting, when they change their early plumage for hard feathers; but they do not become naked like adults. Feeding has much to do with it. Birds that are highly and artificially fed moult earlier than those that have to work for their food.]

DEALER IN BIRDS (*A Subscriber*).—Apply to Mr. Andrews, Old Compton Street, Soho.

CREWE POULTRY SHOW.—In our prize list, instead of "Mrs. Colemans," it should have been "Mrs. C. Howarth, of Colemans;" and, instead of "Horwich," read "Horwich."—"We are informed that Mr. T. H. D. Bayly took the first prize for Game Bantams, and Mr. Burgess the second."

LONDON MARKETS.—OCTOBER 25TH.

POULTRY.

The demand for poultry is still very small, and any improvement in prices is, consequently, only temporary. Trade has seldom been worse than it is at present.

	Each.	Each.	
Large Fowls	4s. 0d. to 4s. 6d.	Hares	2s. 3d. to 2s. 9d.
Small ditto.....	3 0 " 3 6	Partridges	0 4 " 1 0
Chickens.....	1 9 " 2 3	Grouse.....	2 0 " 2 6
Geese	6 0 " 6 6	Pigeons	0 7 " 0 8
Ducks	2 3 " 2 9	Rabbits	1 2 " 1 3
Pheasants	2 6 " 3 0	Wild ditto	0 8 " 0 9

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	NOVEMBER 2-8, 1858.	WEATHER NEAR LONDON IN 1857.								Clock afterSun	Day of Year.	
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.			
2	TU	Andersonia sprengeliioides.	29.668-29.654	61-49	S.W.	.01	57 af 6	30 af 4	6 af 3	26	16	18	306
3	W	Ageratum Mexicanum.	29.765-29.667	60-51	S.	.53	59 6	29 4	23 4	27	16	19	307
4	TH	Bertholina pectinata.	29.798-29.767	61-51	E.	.22	vii	27 4	42 5	28	16	18	308
5	F	GUNPOWDER PLOT, 1605.	29.864-29.811	60-50	E.	—	3 7	25 4	scts	16	16	309	
6	S	Cassia corymbosa.	30.013-29.919	57-48	W.	.03	4 7	23 4	6 4	1	16	14	310
7	SUN	23 SUNDAY AFTER TRINITY.	30.183-30.122	55-40	W.	.03	6 7	22 4	3 4	2	16	11	311
8	M	Camellias.	30.284-30.187	54-45	N.E.	—	8 7	20 4	14 5	3	16	6	312

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 52.5° and 37.6°, respectively. The greatest heat, 65°, occurred on the 3rd, in 1847; and the lowest cold, 20°, on the 3rd, in 1845. During the period 118 days were fine, and on 99 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

As the crops are cleared, dig two-feet-wide trenches, two or three spades' deep, laying the earth of each trench in a rough ridge, to pulverize and improve with the weather, when it can be more expeditiously levelled down as wanted for sowing, or planting, in the spring.

Broccoli.—When it has grown very vigorously, and is required late in the spring, it may yet be laid down, as recommended last month, retaining as much soil about the roots as possible.

CAULIFLOWER PLANTS, either in frames, under hand-lights, or potted singly in small pots, should receive all the air possible, when the weather is mild and dry, taking off the lights, or glasses, every fine day, and only protecting them from heavy rains, or severe frosts.

LETTUCE PLANTS (in frames).—Air to be allowed to play around and invigorate them. When protected from heavy rains, air should be admitted by raising the lights several inches at the back.

MUSHROOMS.—The beds that were spawned last month will now require particular attention, to counteract the ill effects of cold, windy, or frosty weather, by deeper, and therefore warmer, coverings,—more particularly if the beds have been made in the open air. They should be uncovered about once a week, and the surface cleared of any damp litter, or mouldiness, that may happen to be on them.

ROUTINE.—Every part of the garden should now be kept free from litter. *Celery*, *Turnips*, and other vegetables, to be trimmed at the rot-heap, and not on the quarters, where they look unsightly, and harbour slugs and insects.

VEGETABLE CROPS.—Finish planting, if not done last month,—such as *Cauliflowers*, *Cabbages*, *Lettuces*, *Coleworts*, *Endive*, *Garlic*, *Shallots*, &c.

FRUIT GARDEN.

All heavy ground-work—such as draining, trenching, making new borders, &c.—to be proceeded with. Transplant, to fill up vacancies,—pruning and regulating the branches before they are planted, to avoid poaching the ground by treading on it afterwards; if a standard, to be supported with a stake; and all trees, when planted, to be mulched with short litter, to protect the roots from frost.

APPLE and PEAR TREES (Standards).—Keep the centre of the trees open, and cut away ill-placed branches, that either intertwine with each other, or are too crowded. If the heads were kept well thinned out, that the air and sun could reach the whole of the branches, they would bear much finer fruit, and have a cleaner and more healthy appearance.

CURRENTS and GOOSEBERRIES.—Prune, put in the cuttings, manure well, and fork it in between the rows.

FIGS.—Mat up, whether on walls or standards.

FRUIT ROOM.—If there is any fruit still remaining on the trees, it should be gathered immediately; that in the

fruit-room should be looked over, and any that shows the slightest signs of decay, picked out.

PEACHES and NECTARINES.—Transplant, laying out the roots to their full length in fresh soil.

STRAWBERRIES.—Manure and fork over the plantations, if not done before, clearing away the runners, decaying leaves, &c.

VINES.—Secure the branches to the walls, merely cutting off the unripe tops, and leaving the pruning till spring.

FLOWER GARDEN.

The weather is now most favourable for planting, and it should, therefore, be proceeded with expeditiously. When large trees and shrubs are to be removed, they should be taken up with the greatest care, preserving every root, more particularly the smaller ones, which is of much greater advantage than retaining an immense ball of earth around the large roots.

AURICULAS.—Continue to look over them, taking off dead leaves, and, above all things, seeing that the plants are in a dry, healthy condition, and have no drip from the frames.

PITS and FRAMES.—All flower-garden plants—such as *Petunias*, *Verbenas*, *Calceolarias*, &c.—should now have frequent attention; the supply of water to be limited to that quantity only which is requisite to keep them from flagging; to be frequently gone over, and all dead leaves immediately removed. Give them all the air possible during the day, if dry, and shut up tolerably early in the afternoon.

WILLIAM KEANE.

CUTTING DOWN CLIMBERS.

I HAVE been requested to state the reason for cutting down young climbers so close as I recommend. But the practice is not confined to young climbers only; old ones, under unfavourable circumstances, need often to be cut back just as much as the youngest. The first reason which appeared to me conclusive is not so common now as it was in 1830, when it covered the whole face of a large plant of *Thunbergia coccinea*, trained on the back wall of a greenhouse, in the shape of brown, soft bugs, and dry white scales,—the two making one clear reason for getting rid of the whole top of the plant at one sweep. At the time this was done, I had been just fifteen months out of the Experimental Garden, in Edinburgh, and the ruling passion for experiments was strong upon me. The plant was condemned by its owner, on account of the insects, and because it never flowered. It was known elsewhere as one of the most difficult of the old climbers to bloom, so difficult, indeed, that hundreds of gardeners have never seen it yet in bloom. Instead of destroying this plant, I had it cut down close to the collar, about the middle of May, and whitewashed the wall. In a short time, the plant was up at the top of the back wall, stronger and more leafy than any of the kind I had ever seen before or since.

By the middle of August, the whole space which was occupied by the old head was covered by the new head on old shoulders,—just what we want in all our gardens at the present day,—the enthusiasm of youth, and the practical experience of a long life-time united in one and the same person. That winter, this new head flowered all over, and kept in flower a long time,—two or

three months,—the whole of the back wall looking like a bank of Scarlet Runners, the blossom being very like those of the Runners. The same plant flowered the second winter also; but, at that time, there was a flush of new greenhouse climbers, and the old *Thunbergia coccinea* was rooted out, and *Eccremocarpus*, *Maurandya*, and *Lophospermum*, were put in its place.

In the next house, which was a lofty stove, there was a most noble-looking climber, which never bloomed there, or anywhere else in England; but it was as clean as a new pin, and no insect ever touched it. I requested leave to repeat the experiment of cutting down upon it; but there was no reason I could urge for so doing. However, down it came—every leaf and branch of it—late in the autumn, which proved nearly fatal to the roots. The collar of the plant damped that winter, and it was a long time in starting from the top part of the roots; but the growth was unusually rapid, after once it began in earnest, and the plant flowered for the first time in Europe. It was a Passion-Flower, and not much better than the common one. It was sent to Dr. Lindley, and it was figured, in the "Botanical Register," by the name of *Passiflora ligulata*.

The question, then, was,—Why did this Passion-Flower not bloom for the last few years? It had many more shoots before it was cut down, than when it bloomed; other shy plants and trees were then, and are now, known to bloom and bear fruit after being over-grown, as it were,—after their strength is much divided among numerous shoots. And this Passion-Flower had, as it were, its strength renewed by being cut down,—a few young shoots were twice the size and strength of the numerous old ones. Therefore, although there was no particular reason for cutting down that climber in the height of its vigour, there then appeared to be some connection, or reason, between the cutting down, and the flowering of the two shy bloomers; and, from that day to this, I have acted on that conviction, and never failed in one single instance.

But, though the practice has been uniform, and the result always the same, my reason for it may not be the true one after all. Still, it would look as though I wanted to shirk the question of a much valued correspondent, if I did not give the reason, as it appears to me. The reason is this,—certain plants will not easily bloom under cultivation, unless their strength is much exhausted, or expended, in the growth of a great number of shoots and spurs, because that is their nature; and there are those that will not bloom at all under that condition, also because it is their nature. The first class require their strength to be much reduced by sub-division; the second, to have their whole force and strength concentrated upon one point, as it were. This being so, and the last fact being not sufficiently recognised in our books, most gardeners apply their practice on the principle of dividing the power and energy of these plants, so as to make them bloom the more freely, as in the first example; but this leads them, sure and certain, into disappointment, whenever the subject belongs to the second division. One uniform rule of practice brings complete satisfaction, or sheer defeat. *Beaumontia grandiflora* is an instance of recent proof: one man could bloom it anyhow, or everywhere, and ten better men failed with it, as completely as any failure in this world ever was. Mrs. Lawrence and Mrs. Grundy would give their wedding-rings off their fingers for getting it to bloom in their gardens, but it would not. They went the usual way to work, in hot and cold temperatures: but the plant belongs to the unusual class, like *Passiflora ligulata*, *Bignonia Chirere* and *jasminoides*, and a host of other relatives among these Bignonias, each and all of which require the unusual expedient of concentrating their forces into a few points, to enable those points to bloom, or bear fruit. It is not going too far, to say, that two thirds of the whole strength of the finer Bignonias lies in their roots. Beaumontia is a Bignonia, all but something, which is not appreciable in practice, on the concentration of the plant: Their roots require to be very strong before they are able to form flowering wood, and, while they are acquiring this strength of root, their tops multiply freely with comparatively weak growth, which will never bloom. In the wild state, when the strength of the roots is more than the tops can appropriate, strong suckers issue from the collar, as we see in Brambles and wild Roses; and these suckers take up the whole force directly from the roots, and bloom freely, leaving the old head to dwindle away for want of sufficient nourishment.

In cultivation we arrest this dwindle, and force the production of suckers, by cutting the old head clear off; and thus, by increasing the strength of the suckers, or new shoots, from the very bottom, we hasten their flowering condition. But, to make

the flowering more certain, it is often necessary to add also to the strength and efficiency of the roots, by giving them fresh earth, or new borders,—just like taking up old Vine roots nearer the surface in an improved border.

Now, I had all that in view, when I said that I would, or could, bloom every old Beaumontia in the country in three years, which I am certain I could do. The first thing I would do now, would be, to prepare the best soil—loam and a little turfy peat, and nothing more—for the borders: next spring (in April) I would clear out every particle of the old border, and take special care of every root and fibre of the Beaumontias. I would lay them at full length, within six inches of the top of the border; and if the heads did not push naturally by the first week in May, I would force them artificially to do so; and, as soon as they were fairly on the move, I would cut them all back to the collar, and rest awhile myself, but would give them no rest. I would keep the house at a forcing rate for the next six weeks, and by that time I could tell which of the plants would, and would not, bloom that season about August. I would not touch them with the knife, nor hinder their own way of growth, the whole season. When the leading sucker, or new shoot,—for I would only allow one to issue from the collar,—began to branch at from ten to twenty feet from the roots, I should be sure of a bloom; if not late the first season, it would be sure enough to be early in the next. These side branches, if they are strong enough to flower, will run from eighteen inches to thirty inches, and then branch again into spurs, like a Pear tree, only much larger. An ordinary spur will be twenty inches across, and with from five to twelve magnificent trumpet-shaped white flowers, of great substance. Above these huge clusters come tufts of flowers, in twos and threes, close to the young leading shoot,—something in the way an Apricot blooms.

If I had no bloom the first season, I would cut down every one of the plants again next year, as soon as I could perceive natural growth commencing, but not sooner, for fear of the roots refusing to push in time for a long growth. I would cut them, year after year in the same way, till I was certain of the requisite strength to bloom; but after a good bloom I would only cut back the spurs to six or seven eyes, and the leading shoot, or shoots, above them, according to my room; then, if the roots were in good condition, I never knew these Beaumontias to fail in blooming every year, and I had them in bloom fifteen years; the last half of the lot were bloomed at Shrubland Park.

One of the most prevalent errors in gardening, at the present day, is, that if the side of one's house, or the rafters of the conservatory, were once stripped, by this way of cutting down climbers, it would take no end of time to get them up to the mark again. There never was a greater error. With nine-tenths of our best climbers, in-doors and out, there is not a week or day lost in blooming. Every climber which blooms on the current season's growth, like the Rose, will bloom the same year it is cut down to the ground, if it is in a blooming state, and is cut back in the spring. A climber which failed to cover a certain space for the last six years, will often reach the limits the very first season after it is cut back. But it is adangerous game, unless the roots are in such a good soil and condition as will sustain this free growth in after years. Three years was the space of time I used to allow for the *Ipomoea Learii* to exhaust the soil of the best border. I took it up with roots fifteen feet long, and as fleshy as a Carrot; laid them on the new border, at six inches from the top; filled in, and cut the old plant to the last eye next the roots in April; and in August following you could count 500 open flowers on that very plant every morning; and that was not done in a corner, but in the centre, and all round the conservatory at Shrubland Park, where it was seen by hundreds. The large-leaved Passion-Flower, like the *ligulata* just mentioned, and *marucuya*, and even the true *quadrangularis* (the Granadilla Vine of the French), are very difficult to be brought to a fruiting condition, without being cut down close to the ground as soon as they are of sufficient root-strength to bear fruit. There is never a day lost in bloom or fruit, by cutting the largest Passion-Flower in cultivation down to the roots. You have only to imagine the roots of such plants to be great reservoirs, or lakes, in fact, and call the branches burns, rivulets, canals, and rivers. Well, then, when the burn runs,—and is all that is to run,—the lake is not bigger than a pool; the lake now increases fast, and the burn increases to a small river or rivulet, and never gets bigger; when the lake is large enough, therefore, to keep a river going, some, or most people, cut a canal, to help the rivulet in emptying the periodical flow from the lake; but the flow in both is not near

sufficient to allow the swelling in the lake to take a free and bold course,—it breaks its banks, cuts a fresh channel, and a mighty river finds its way at last, where formerly ran only the merry burn. The breaking through the embankment of the lake, and the rush of waters, may fairly be compared to the bursting forth of a strong sucker from the collar of a plant, whose strength had been pent up in the roots, because the capacity of an old shoot or two running into banchy, small growth, was not capable, any more than the burn, to ease the roots from the accumulations of years. Then, the actual reason for cutting down such climbers, and all other plants, in this fashion is, because the outlet of a vigorous flow of sap from the roots is not of sufficient capacity, through the weaker growth of former years, or through some injury or stagnation in the old channels of the sap. In like manner you will find Nature exerting the same claims in the forest, in the grove, and in all her domains.

The seed of a Vine, Beaumontia, Clematis, Rose, Honeysuckle, Bramble, or any other fast-growing plant, is sown in one of Nature's own ways; it vegetates, and up comes a spindling little stem the first year; it lengthens and multiplies in side branches very much the second and third years; and if Nature could assist it by keeping other plants from it, by allowing it its due share of nourishment,—light and air,—the first, or bottom part, would increase in size and capacity according to the head. But no such care is bestowed on seedlings in the wilderness; and the wild climbers have a struggle for life during the first period of their existence. The original stem gets hide-bound, and the scrambling head is so much divided, that very few of the branches can climb, or twine, up to the sun and free air. But all this time a healthy store accumulates in the roots, and, when that accumulation comes to the full, away bursts an enormously strong sucker, as compared with the shoots in the original head; and, if Nature could then cut away the whole of the old head, down to where this very large sucker came from, would not the proportion of sap, which would still go to the old scrambling head, mix with, and go up in, easy flow and current through the vessels of the sucker? That it certainly would, and add much to its health and vigour.

Then the chief difference between a wild climber righting itself slowly in the forest from the effect of youth, age, or accident, and another cultivated climber, which needs righting, is simply that the gardener would at once ease it of the old head, by cutting it off down to the sucker; or, which would be still quicker, by first cutting all former growth, and then forcing a sucker by the art and mystery of his calling. Sometimes an Oak has to be cut down, just as close to the ground as one of these climbers, before it can be made to assume the right way; and sometimes the same with all other kinds of trees in cultivation. But sometimes, and at most times since the thing has first been done, most people are, and have been, contented to meet Nature half way. We will prune, and Nature will do the rest. It was a bargain,—man

went on pruning his trees, and Nature followed him doing her part, till they came to the Vine, which was in a very bad condition indeed. The man pruned and pruned, and spurred, and tried all sorts of ways, but all would not do; nor would Nature assist him in the smallest degree. There was nothing said about climbers in the bargain they made, and the Vine is a true climber. The man got so enraged at last, that, one day, it was dangerous to come near him at all; he looked so determined about the eyes, that all who knew him found means to keep out of his way; and, just before going into dinner, he went to the Vine and cut it down, slap to the ground, and so got rid of it for ever, as he thought. But, by-and-bye, would you believe it, a very strong new Vine came up, almost like Jonah's Gourd, before his eyes; and, on looking more closely, and turning the soil round the old obstinate stump, he discovered that this new Vine was only a sucker from the collar of the old one. Had you seen him at that moment, you would never forget him. Well, I hope you will never forget what followed: he had a fine crop from that sucker; also, a second crop, which was not amiss; but this time he left too many bunches, and did not sufficiently thin them; and, if you believe me, the Vine was worse than ever, just as if it had been bewitched. The man was on his metal at last, and struck the metal, and it sounded quite clear that the roots were too deep: they were too far from the heat, and too cold to be heated at that depth. The next move was most carefully to fork out every root from the cold earth, to run the old border out with harrows, to make a thorough drain across the end of it, and also to make a drain across the bottom, to run into the end main drain. Then, as the old border was too deep by half, and he wished the new one to look as high in the world as the old, he filled over the drains, about twenty inches deep, with the débris of an old house, which was taken down in the neighbourhood. On the top of that mixing he made a two feet deep border, with stuff as good as ever a Vine grew in. He planted the bewitched Vine, and once more cut it down to the collar, but this time in a very different manner.

Now, that was the first Vine that was ever cut that way, and from that day to the end of his life that man never met Nature half way a second time with climbers. He could then understand what ailed his pillar Roses, his moth-eaten Honeysuckles, his Jasmines and Passion-Flowers, his Bignonias and Beaumontias. After that he never allowed very fast climbers to fruit, or flower, in the same soil for many years together, unless he gave the soil more in substance than the roots took from it at one crop; and whenever anything was the matter with his climbers, or pot plants, especially if they got insecty, his sure and certain remedy was, "cut to the collar" and come again. I never heard that he failed; therefore, it is only reasonable that I should recommend his practice to all and every one who is now, or ever may be, in a regular fix.

D. BEATON.

BICTON.

(Continued from page 51.)

As the mansion is placed on a *knowl*, the flower garden may be said to be situated on a lower opposite *brae*, the houses occupying the highest point, and the piece of water the lowest point, between the garden and mansion.

The garden is a parallelogram, bounded longitudinally by two splendid walls of Magnolias. I scratched a supposed longitudinal section, as a sort of remembrancer, before sleeping that night, which I enclose.

SUPPOSED LONGITUDINAL SECTION OF FLOWER GARDEN.

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1. Part of platform on which ranges of houses, plant yards, dwelling house, &c., are situated.
2. Sloping lawn flower garden.
3. Steep grass bank, stairs at each side, close to the Magnolia wall. These stairs have about fourteen steps each.
4. Nearly level lawn, with nothing on it, down to

6. A regular piece of water.
- 5, 7. Walks round the water. Sides graced with beautiful standards of Sweet Bays.
8. Steep grass bank, topped and backed with timber. Magnolia wall on each side (230 feet in length), from front-range of houses to about commencement of water.

I do not now recollect how the ranges of houses were placed, but I know I passed through a large camellia and orange-house, with a span-roof, more than 100 feet in

length, and about fifteen feet in height,—the large plants being in excellent condition. Also, through a palm-house, about sixty feet in length, and between thirty and

thirty-five feet in width and height,—with Musas of different kinds in fruit, and *Cycas revoluta* throwing up a strong fruiting-stem, with nothing the matter with the plants, except that one and all were crying out for more room. Also, through a large orchard-house, with few things in bloom, but also filled to overflowing,—many of our best stove plants finding a home there, and also in the palm-house. There is, also, a span-roofed heath-house,—about fifty feet long, fifteen wide, and about thirteen in height,—having a Portland stone platform in the centre, and a shelf, two feet wide, of the same material all round. A New Holland-house, furnished in a similar manner, was chiefly filled with well-grown Fuchsias: that tribe of plants (the New Holland), and many of the Heaths, were rusticating in frames,—some under glass, and some under thin bunting, and some thoroughly exposed, according to their circumstances. There were also beds surrounded with neat posts, rafters, and rails, of a permanent character, permitting of shelter being thrown over them, and also removable at any time. Many of the New Holland plants and Heaths had a row of large, equal-sized pebbles placed round the sides of the pot, to secure moisture and coolness to the roots, even whilst the collar of the plant was considerably elevated. All seemed to be potted in the rough, fibry material, which was kept looser still by means of pebbles, and pieces of charcoal, and a fair admixture of pure sand, which Mr. Barnes was among the first to practice, and recommend to the gardening world. In these standing beds, were large quantities of Chrysanthemums, Salvias, Primulas, &c., for autumn and winter blooming. We also looked into a neat, commodious, propagating-house, but which had no great number of tenants just then. The chief pine-house, or pit, is span-roofed, and not much under 100 feet in length, with full command of heating power, for bottom heat, top heat, and throwing in volumes of vapour when desired. The plants were healthy and robust, but not at all remarkable for their strength, or height, though, as we saw, producing good fruit. Some years ago we were also struck with the short, stubby plants at Trentham. The careful cultivation, the great command of heating power, counteracted with such thorough command of light on all sides, and a plentiful admission of air,—all tend to produce this stubby habit. The plants were in pots, and growing in open, lumpy, fibry soil, enriched at times from the various manure-water receptacles.

So far as I recollect, there is only one long light on each side of the span, the lower end resting on a low side wall. Such a long light would be unwieldy in general circumstances, and would either require to be taken off, or held up, when examining, or watering the plants,—both to a certain extent interfering with economy in labour. All this is prevented by a very simple contrivance,—a hollow space is left, between the central ridge board and the ridge roll, sufficient to allow the end of one light to pass over the other. The flush, or coping board, is divided, on each side, into as many pieces as there are lights, and each of these pieces is hinged to the ridge roll; a turn button between every two keeps this coping flushing-board as close as if it was fastened all the way along; turn these buttons, and you may push your lights up high enough, on either side, for all necessary purposes. This plan might be adopted, with much advantage, in wide span-roofed pits. We also found great quantities of Pines growing in rough dung beds, in an enclosed corner, with the dung packed up to the top of the frames and rough boxes: but we will describe the mode of managing hot-beds when we come to the kitchen garden.

Besides these, we found two peach-houses with good wood, the fruit all gathered and the wood rough-pruned, in order that the light should have more influence, and the energies of the plants be more concentrated in the wood left; also two vineeries of good size,—one in a bearing state, and the other fully exposed, the fruit and

nearly all the leaves being gone. In this house, the plants were chiefly grown in a raised pit, surrounded by wood in the centre of the house, in order that, for early forcing, the roots should be more thoroughly under control. Whatever else there might be in the front range, it had the elegant temple already mentioned for its centre, and a conservatory on each side,—each between forty and fifty feet in length, and about eighteen feet in width and height.

Before leaving this village of glass-houses, I may state, that the shed room for tools, mushroom-houses, working under cover, potting sheds, &c., is very ample,—the potting benches being of as durable material as the shelves in the heath and orchid-house, and the supports dividing the space below into bins for different kinds of soil, charcoal, &c., none of which is ever mixed before using, every care being taken to get the compost sweet and aired, without the decay of its fibre; that the whole of these sheds, down to the ashpits of the furnaces, were in trim order; that a fine *Glycine Sinensis* covered a large space of the roof of one of these ranges of sheds; and that, with the exception of the regular standing-places for plants, under such stages as I have referred to, the whole of the pathways and open spaces round the houses were pitched with pebbles, set firmly and regularly on end,—each being about the size of Lapstone Kidney Potatoes,—such pebbles, of all sizes, being found plentifully on the shore. Not a single weed was perceptible, and in the heaviest rain, as well as during the brightest sunshine, a pleasant, firm pathway was presented, in which you could leave no foot marks. I may here mention, also, that in all the pathways in the grounds, having any considerable declivity, the sides of the walk, for about the width of a foot, are pitched with smaller pebbles; and, in order still further to prevent the running and dislodging of the gravel in rain storms, iron pipes, with small openings, are placed at intervals across the walks.

From what has already been stated, the position of the flower garden will be easily seen extending southwards as far as the steep bank of grass, bounded on the east and west by the Magnolia walls or hedges, each 230 feet long; that wall, also, extending near to the water, and thus enclosing most of the beautiful level lawn between the flower garden and the water. Standing in front of the temple in the centre of the conservatory range,—the temple graced with busts, in niches, of the Duke of Wellington, Nelson, Sir Walter Raleigh, &c., and a small border close to the houses, throwing up in abundance spikes of the Belladonna Lily,—you find that, after passing the wide, smooth, gravel walk, a grass avenue divides the garden into two equal divisions. On each side, not far from this gravel terrace, are placed two small, beautiful fountains, and rich vases, &c., are not wanting as accessories. Right opposite the avenue, a fine artistic fountain is placed in the centre of the sheet of water, and, farther on, a wide break in the steep bank, which bounds the garden in this direction, brings in the obelisk already referred to, in the centre of the vista, and thus agreeably breaking the sky outline. The space from the top of that bank to the park is planted; and at the west corner is a gigantic Lime tree, little less than 100 feet in height, with girth large in proportion, and its branches hanging in the most graceful manner down to the bank.

At regular intervals round the piece of water is a row of beautiful standard Sweet Bays, the heads kept in regular, but yet not heavy outline, by a regular pruning, but so done, that the cuts of the knife were invisible, unless sought for. In the west corner, was also a collection of Yuccas, forming a striking contrast to the smooth lawn, from which they were not distant, though separated.

A small border separated the Magnolia walls (two) from the walks, and this had temporary flowering plants along its edge; but these, I understood, were to be discontinued

in future, and with great propriety, as the Magnolias could occupy all the space comfortably, and as anything else was thoroughly dwarfed and meagre beside them. The Magnolias are almost entirely of the *Exoniensis* variety of *grandiflora*. On one side I counted more than three hundred open flowers, and then gave up. By nipping out the points of a number of shoots in the spring, especially of those not likely to bloom, fresh shoots are produced, that bloom freely in autumn, and swell their buds even in winter. These latter, cut and placed in a house in water, where there is a moderate heat, open freely, and thus, unless in an extra severe season, Magnolia blooms may be obtained all the year round. With little of the envy in my temperament, I did feel just an inkling of jealousy towards our Devonshire friends, in noticing their Magnolias, Hydrangeas, Myrtles, and Figs.

The flower garden, as a whole, was a pleasant change from the fashionable - grouped flower gardens in this neighbourhood. There were many little groups of bedding plants, that came in nicely between fine specimens of trees, and masses of shrubs, many of which bloomed in winter, and early in spring. Instead of blazes of colour, without a sufficiency of light and shade, there was a great variety of outline and form, arising from the naturally diversified mode of growth and foliage presented by the numerous trees and shrubs. Nicely as the flower-beds looked, I could well believe, that the garden in spring, when enriched with blooming bulbs, Primroses, Poly-anthus, Violets, &c., would be quite as lovely as in the end of August. Beautiful foliaged plants were also brought into request. Close to the grass avenue, in front of the temple, were two fine plants of *Dracæna longiflora*; and, in other parts, fine specimens of *Yucca grandiflora* and Pampas Grass. Beautiful Junipers and Cypresses were there, as well as Deodars, different Pines, very large Araucarias, and *Abies Douglassii*, with their more massive outlines. Either here, or close at hand, a splendid Araucaria was bearing female cones, swelling freely, having been fertilised from another fine tree bearing male cones. A beautiful Deodar was also bearing cones on several of its branches. Space would fail to chronicle the Camellias, the large Myrtles, the Aloysias, Leptospermums, Edwardsias, Arbutuses, and, more especially the Escallonia, which here find a suitable home,—*Escallonia Montevidensis*, and the other best kinds, not only living without protection, but blooming freely in most winters.

In addition to other cares, Mr. Barnes, though requiring a good number of bedding plants, has not made more work, by covering a large space with that peculiar style of gardening alone; but, if such a style of gardening, combined with the highly artistic, should ever become a desideratum at Bicton, I know of no place where it could appear to better advantage, than on the beautiful lawn between the flower garden and the water. All the surroundings would add to the beauty and the grandeur of such a position. The present flower garden would be a nice contrast; and, as there is abundance of water, the vista opening between the banks might be transferred into a series of cascades. One word more. The very steep banks render them more artistic, than if they had a greater slope; but the artistic beauty is considerably lowered, from the apparent difficulty of mowing them,—an idea which must strike every one who has handled a scythe. It transpired that few of the men could do it well. Where there was so much space, a few feet wider at the base could make but little difference in appearance, and would add much in the way of comfort. There were some round, whitish knobs of wood, here and there, on the banks. My friend wanted to bet ever so much that they were Mushrooms. The bet came to nothing, as, in such matters, a farthing's worth is generally my standard. But it struck me afterwards, that these rounded pieces of wood might cover the holes in which the scythe's-man in the centre might be able to stick his heels, and thus, at times, steady himself. These very steep grass banks seem

to be getting fashionable. Such excessive steepness, in my humble opinion, is purchased at too great a price, so far as comfort in management is concerned.

A door opens in the Magnolia wall on the east side, close to the steps at the steep bank, and you are ushered into a rock or block garden, with a shell and mineral house at its highest point. These had all been removed, and the house was in the hands of the masons, &c., as the dry rot had got into it. This block garden was chiefly graced with Ferns, small Alpines, and other fine-leaved plants. Perhaps the most interesting of the latter were two lofty, very graceful plants, forming almost a natural arch, of the Palm-like *Arundinaria falcata*. I saw either the same kind, or one extremely like it, shortly afterwards, at the Crystal Palace, under the name of *Arundinaria Himalaya*.

The most striking thing, as a work of art, in this garden, is a pillared fountain, some ten feet, or more, in height, formed of stone, flints, &c., and covered with Ferns, Lycopods, and common Mosses, through which the water, after issuing from the top, trickles down very prettily. Here we get fine peeps of the parish church through the trees; and, emerging southward from the block garden, we get again on a beautiful lawn, ornamented with splendid Magnolias, Araucarias, and almost every variety of Thorn along its banks. This lawn separates the rockery from the church, and is intersected by a beautiful rivulet, the banks of which are graced with large plants of *Arundo donax*, to be diversified with masses of the Pampas Grass, and, I believe, the elegant *Arundinaria*, just referred to. This stream winds on to the American garden, containing all the best Rhododendrons, Azaleas, and a large collection of all such bog plants, the first sight of which we had that morning, when coming from Budleigh Salterton, the road passing close to it, and merely divided from it by a steep bank of trees.

The church has been erected by Lady Rolle, as a memorial of her husband, the late Lord Rolle, and the interior is a rare combination of fitness, in unison with elegance and simplicity. Part of the old church is still standing, and contains, in a recumbent position, two exquisite marble statues of two predecessors of the family, and a most elegant and elaborate piece of carved work on stone, to the memory of the late Lord Rolle. From the front of the church, the eye sweeps over part of the scenes I have attempted to describe, taking in part of the flower garden, and the buildings beyond. The beautiful itself is a monitor for good. How tranquilising such scenes!—how soothing to the spirit, harassed with cares and anxieties! In such trees and flowers, there are heart-searching, heart-humbling, and heart-elevating sermons. Rightly read, they must ever prove a good preparation for the more solemn teachings of the sanctuary. Here such influences may well act and re-act on each other.

The kitchen garden, to the lover of good culture, and to the young gardener, is, perhaps, the most important feature at Bicton. We have less regret, however, in skipping it hurriedly over, as the theory and practice of cultivation there carried on were detailed in the earlier volumes of this journal. We were rather surprised at its smallness, but that is remedied by close and rotation cropping. Naturally of a thin sandy soil, the staple is now greatly increased in depth and fertility, by loosening more and more of the subsoil every year, and adding what fresh soil can be obtained from the neighbourhood, and the refuse from potting benches, &c. Most of the cropped ground is divided into ridges, running north and south, twelve feet wide at the base, and raised from fifteen to twenty-four inches in the centre. The ridge acts as a protection to each side alternately. As surface and rather deep-soil stirring are much insisted on, these wide ridges, in addition to other advantages, enables this stirring to be given without treading the ground, as most stirring may be done from the hollow alley between the ridges. I have long used similar ridges, even when running east and west, with advantage.

Mr. Barnes sows his Cauliflower seed in the last week of September, but the main crop in the second week of October, in a slight

heat. The seedlings from the last are potted into thumb pots as soon as handleable, are transferred to 60's when necessary, get a larger shift if the weather should be very severe, and are kept on the floor of a glass-house, free from much frost, all the winter; and then, when the ground is nicely aired, early in spring, they are turned out on a fine day,—some under handglasses and some in these ridges; and heads can be got freely in April. The frost does not try them so much in the spring as with us; but the days are often long, damp, and sunless.

The wall and other fruit trees were in excellent condition, and the walks were very clean and comfortable. As Box did not suit over well, the edgings were made very neatly of large pebbles, set firmly on end; and this gives no harbour for slugs, though the constant stirring, the charred material, ashes, &c., must let those that remain at all have a very unpleasant life of it. No forcing is done with fire heat. Having the firing all together is an advantage. There are some brick pits, for Melons, &c., heated by linings, and these are boarded over for neatness. There are ever so many wood pits, earth pits, and turf pits, in the outside slips, for protecting and forwarding all sorts of things; and there are a good number of frames, or boxes, set on dung beds, the mode of forming which beds I will just allude to, as being the safest and most economical, where a fair amount of fermenting material can be procured at first. I practised this mode many years ago, and could get Melons, &c., as easily by it as with a hot-water apparatus. I was rather proud to find, that, without previously knowing it, our practice at that time coincided with that now, and I suppose then, adopted at Bicton. The distinctive features of making such beds seem to be these:—1st. Secure dryness for the bed, by a base of faggots, stones, &c. 2nd. Have the dung and leaves well worked and sweet. 3rd. If very short and compact, place another row of faggots, or wood, in the middle of the bed, to keep it open. 4th. Do not build the bed too high,—from two feet to two feet and a half, or three feet at the most,—and there will be little danger of burning at the roots. 5th. Make the bed at once so large as to have at least two feet—the more the better—all round the frame, or box. 6th. Ere long, bank up this outside space, all round, right to the top of the frame, and keep turning it a little, and adding when required. I need not say, that, whilst there is no danger of burning the roots, you can keep the atmospheric temperature pretty well at your command, and can have that dryish or moist at pleasure. We have used brick pits for early forcing much in the same way. Keep banked up to the wall plate, and you will have little trouble in turning linings, or often giving fresh ones. Protect the outside with branches, or litter, when extra cold.

Though not heated, we found a large range of lean-to houses,—some 240 feet long, sixteen wide, and about twelve high at back, and five, or more, at front. These were divided into equal proportions,—Peaches at one end, Grapes at the other, and Figs in the centre. In the last days of August, many fine Peaches and Nectarines were still remaining. Grapes were getting ripe, and, to keep them from damping when wet and foggy weather came, an iron stove, similar to what I mentioned the other week, would be placed inside: plenty of air being given, the heat from the stove would alike dry it and put it in active motion. The Figs were planted against the back wall, and trained down the roof, so that they were all above the head. The floor was pitched from side to side, but I learnt that the roots were confined to about two feet in depth, and little more than a yard in width. An abundant second crop was just coming in, and we were told that the first crop had been abundant. We could well imagine what an amount of standing room such houses would give for early Cauliflower, early Potatoes in pots, and moderately early Strawberries and French Beans.

From the outskirts of such a garden much may be learned. I will just allude to two or three circumstances. 1st. The ground-work of superior culture at Bicton is fresh, fibry soil,—sweet, well aired, and yet not much decomposed. There being vast commons all round, of which Lady Rolle is proprietor, or lady of the manor, there is no difficulty in getting it in abundance. The top spit of this is taken, and that not deep; and, when brought home, it is built up in narrow stacks, with hipped and thatched roofs; and though a good portion of the Heath, Gorse, &c., is taken with it, yet, to prevent it even then getting too compact together, brushwood and faggots are placed in layers in the heap, in order that the air may circulate freely all through it. 2nd. Several large buildings, in the way of sheds, securely thatched with straw or Heath, formed entirely of rough wood, without a nail in the whole, and made almost wholly by the

garden men. A nice lesson is here given in log-cabin making, if ever that should be required. A great convenience is also given for drying all sorts of seeds, working at large jobs on rainy days, and keeping dry and in good order all the larger utensils and implements used upon the farm and garden. 3rd. A bottom was made by a layer of Furze and Heath, but chiefly of the former, for all the stacks of victuals, and into that neither mice nor rats would intrude their noses. Such stacks are built low and small, on account of the gales from the sea; and, noticing that the thatching was cut close, instead of hanging over a little, in the way of eaves, as in this neighbourhood (Luton), I was told, that the ear end of the sheaves was kept more upright than with us, and that, therefore, there was no danger of rain entering.

With much kindness, Mr. Barnes explained his mode of sheep rearing, and keeping them free from foot rot, and other diseases, and showed us splendid fields of Swedes and Mangold Wurtzel,—the plants in wide rows more than met, and had large roots there. In every department, the greatest order and system were apparent. This order is greatly promoted by a series of rules insisted on among the men. A number of years ago, I tried some of these rules, and found they saved a great deal of annoyance. They did then work with me, and then got into disuse, but I think of reviving them. An abstract of these I shall be happy to give, if it should be deemed desirable. Meanwhile, I close this long gossip about Bicton, by expressing the pleasure I felt, in shaking hands with, and receiving kindness from, a gardener, from whose practice, as embodied in his writings, I had previously derived much instruction and advantage. R. FISH.

THE WARDIAN CASE.

THIS name is understood to mean a glass-covered box, or pot. When Mr. Ward first introduced it to the notice of the public, it was thought necessary to be kept close, as if the plants in it were about to be exposed to a long sea voyage, and required to be kept from contact with the external air. This was a great and, in many cases, a fatal mistake. The plants, even where they existed for a short time, became attenuated, and of a sickly pale hue, and soon died. I have frequently had to refit and replant the cases in London for different parties, until at last they were in despair, and gave them up, and consigned them to the lumber-room; for the owners said, even when the case was fresh planted, the moisture condensed on, and obscured the sight of, the interesting Ferns and other plants, and thus took away the pleasure that would have accrued had the glass been kept clear.

I always admired these tiny glass-houses, and, indeed, do so now. I think it a great pity that any mismanagement should have a tendency to discourage the use of these interesting ornaments of the drawing-room, or staircase, or wherever they may be placed. In order, as far as lays in my power, or influence, to prevent such a misfortune, and to induce cultivators to try their skill in planting and managing these glass-covered plant-cases, I will give my experience on the subject in this essay, and I trust my remarks will be found useful to many readers of THE COTTAGE GARDENER.

THE GLASS CASE may be of any form and size. It should, however, have the following conditions:—1st. As it generally is placed in a room, where if the superfluous water escapes it will be objectionable, provision should be made to catch it. This is easily accomplished by having a water-tight under-case, with a tap at the lowest part, to draw off the superfluous water. 2nd. The soil to fill the case with should be of a porous nature, and should be elevated above the rim of that part of the case that holds the soil. 3rd. The upper, or glazed part, should be quite distinct, and then, when it is lifted off, the operation of culture may be easily performed. If the case is a large one, it will for safety be necessary to have two persons to lift off the glazed, or upper part. A greater interest may be created by forming miniature rockwork, with some light porous stone, or cinders, washed over with Roman cement. Where this is adopted, small interstices should be left within, or between the pile. Pumice stone is the best material that I can find for this purpose. It is sufficiently light and porous, and answers admirably. Considerable taste may be displayed in forming this mimic rock. It should be of a varied outline, both in the height, level, and the sides and ends,—a mere sloping wall is a very formal and tasteless affair. For the sake of variety, different coloured stones may be used.

AIR.—Convenience should be adopted for giving this health-giving element. If it is confined for a long time in a close case, it becomes almost poisonous to the inmates: hence, provision should be made to allow the bad air to escape, and to admit air that is sweet and fresh. Large cases should have the sloping part at the top hinged, or even made to lift off entirely. This air-giving should be more particularly attended to in damp, dark, weather: in dry, bright sunshine the case may be kept close, and even shaded, with advantage. I would recommend the giving of air during the night. Remember this, *no plant will live long in an air-tight vessel*: hence, give air to your Wardian Case at all convenient times.

WATER.—This is quite as necessary as air, rain water being the best. Of course, the greatest quantity is needful in spring and summer, when the greatest growth is going forward. In applying the water, be careful *never to wet the leaves*, especially when in a young state: provision must be made to allow the water to drain freely away.

The best season to fill and plant a glass-case is about the month of March. The soil will then be full of moisture, and then a great amount of ventilation will be necessary. Water must not be given till the surface of the soil is partially dried, evidently showing the need of fresh moisture. In planting, *never crowd in too many plants*; and keep a constant supervision over them, removing every decaying substance, and thus preventing the deterioration of the air. In the autumn especially, many of the fronds will naturally decay. These should be removed before actual decay takes place.

The glass will become dirty, and even turn green: it should then be washed quite clean, well dried, and placed over the plants directly. The soil, too, should be frequently stirred, and in spring renewed as much as possible.

The question now arises,—what plants will thrive in a Wardian Case? In my opinion, formed from many years experience, there is no tribe of plants so well suited for this purpose as Ferns. Other plants may exist for a time, but I never knew any survive a winter except Ferns and Lycopods, and even discrimination is necessary in choosing the species of these two tribes for the purpose. The following I have found to do as well, or better, than any others. Large-growing, or creeping, kinds should be avoided, as they soon overshadow and destroy the smaller kinds. For small cases choose those marked with an asterisk:—

Adiantum Moritzianum.

**A. cuneatum.*

A. affine.

A. pubescens.

Asplenium obtusatum.

A. pulchellum.

A. monanthemum.

Blechnum gracile.

**Cheilanthes micromera.*

C. tenuifolia.

**Davallia pulchella.*

D. solida.

**Doodia lunulata.*

D. aspera.

Lastraea glabella.

Lomaria lanceolata.

L. attenuata.

**Nothocleana nivea.*

Niphobolus lingua.

Pteris hastata.

Lycopodium stoloniferum.

**L. formosum.*

L. casuum.

**L. denticulatum.*

L. reticulatum.

L. circinatum.

L. Willdenovii.

T. APPLEYB.

BEE-KEEPING IN DEVON.—No. IV.

THE YANKEE AND RACOONS—DRIVING—SUCCESSES—EFFECTS OF FUMIGATION—ATTEMPTED EXPERIMENT—A JOURNEY—ARRIVAL—DISAPPOINTMENT—REQUIESCAT IN PACE!

EVERYONE knows the story of the veracious Yankee, who, being an unerring shot with the rifle, succeeded in so impressing the whole race of raccoons with this fact, that at length he had no occasion to fire at all, since the moment he pointed his gun “the darned critters gived in!” I trust the readers of THE COTTAGE GARDENER will not be tempted to place my veracity on a par with that of the denizen of the backwoods, when I inform them, that having once accomplished the feat of “driving” a stock of bees, I did not find the least difficulty in repeating it.

I cannot to this day account for the obstinate resistance detailed in my last communication, since the hive operated on appeared in the most favourable condition for success, being very populous, and entirely destitute of brood. Whether the consciousness of power gave such an air of decision to my after proceedings, as of itself to insure their success, I cannot say, but from this time all difficulties vanished. Whether the stock to be operated on was poor or rich, populous or the reverse, with brood-

comb, or without, the result was the same, an easy victory to me and utter discomfiture to the poor bees.

Therefore, without entering into details, I may shortly state, that, three days after the glorious victory before alluded to, I found myself in possession of the inhabitants of a couple of condemned hives, which I purposed uniting to my own Nos. 1 and 3. I had also the bees from two very populous stocks added to those which survived the fatal fungus; and these being placed all together, in a box with some guide-comb, I determined to endeavour to keep them alive during the winter by feeding, in the hope that, if successful, they might repay my care by forming a strong stock in the spring.

This is an experiment which I have tried more than once with fumigated bees, and with one uniform result: some of them have survived the winter, but have gradually died off in early spring,—the whole becoming extinct by the end of March. Repeated failures in these attempts, combined with other circumstances, had impressed me with the opinion mentioned in my last, “that fumigation is permanently injurious, even to such bees as appear at the time perfectly to recover from it;” and it was, therefore, with no little pleasure that I found myself in a position to repeat the experiment with a large body of bees, the great majority of which had suffered from no more injurious influence, than the temporary fear which had induced them to abandon a well-stored home, for one in which they were altogether dependent upon my bounty.

Everything, therefore, appearing propitious, I gleefully took my seat on the mail, shortly after five o’clock on the morning of the 31st August last, my bee-boxes being carefully stowed on the roof. It was certainly a glorious morning, and I thought with pleasure of the willing labourers I was conveying to garner up the last produce of the now fast-fading Heath; and debated within myself, if it were probable that the destitute unfortunates, whom I had transferred from their comfortable habitations to a box furnished only with empty guide-comb, would be able to do anything in aid of my own efforts to avert the famine which was impending over them.

It was not long ere the sun arose with unclouded brilliancy, from behind the very hill and clump of Fir trees celebrated in a former communication as the temporary locality of my rather limited apiary; and I had the pleasure of beholding, with “my mind’s eye,” at the distance of half-a-dozen miles, my own bees emerging from the tree-tops, and joyfully saluting the glorious luminary as they darted off to their happy labours.

The speed at which the mail travelled soon brought me to the point where its services were no longer available,—about three miles short of my destination. Here, craving permission of a cottager to deposit my bee-boxes in his court-yard, I left them to proceed to a village, a mile and a half off, in search of some conveyance. This I soon found in the shape of a light spring cart and pony, which its driver undertook should, for “a consideration,” convey my little travellers to their journey’s end.

Soon commenced what I have before termed the “main difficulty,” and, in spite of the utmost care and extreme slowness of progression, the steepness of the hill and ruggedness of the road produced a succession of violent jerks and concussions, which must have proved fatal to well-stored hives with heavy combs. In this case, however, there were only destitute bees and empty comb, from the fall of which no serious consequences were to be apprehended; and ventilation being secured, and the bees themselves confined by the holes, and entrances to the boxes having been covered with perforated zinc, we slowly pursued our way, without any misgivings as to the result.

In due course we arrived at the site of the ancient camp mentioned in a former communication, and here I found my bees in full activity. As soon as the conveyance was dismissed, it became necessary to fit up a temporary pedestal for the convenience of the deprived bees. A stout Oak post was soon driven into the ground, and, the box being secured to it, nothing remained but to give the captives their liberty, and effect a precipitate retreat.

Once more, then, open the entrance, and stand by for a rush! It is done; but there is no rush! A few bees run out, vibrating their wings, and, attempting flight, fall slowly to the ground. A still more scanty number succeed in flying, and buzz heavily around.

What, then, has become of the remainder? A hurried inspection reveals the mystery. Stifled in their own sweets, which the violent motion, and, possibly, insufficient ventilation, had compelled them to eject, they lay stark and motionless on the floor-board of each box!

Need I dwell longer on this painful story? Finding fresh air of no avail in restoring them, and that as evening drew on they were indeed gone beyond the possibility of resuscitation, I dug a shallow grave, and interred them on the spot. The gathering shades of night suited well with the gloom of my own thoughts, and I took my departure homewards, "a sadder and," perhaps, "a wiser"—DEVONSHIRE BEE-KEEPEE.

CULTURE OF DATURA WRIGHTII,

IN your impression of THE COTTAGE GARDENER, of the 12th inst., there are communications relative to the plant *Datura Wrightii*. I had myself received a packet of seeds in April, ordered and sent as *Datura fastuosa*,—intending the same, after a summer's growth, for specimen cold greenhouse or conservatory plants. This packet of seeds has produced no less than three varieties,—only one true of *fastuosa*. The two others, alike in habit, but varying in colour; one being a beautiful spotless white, the other a cream yellow. *Fastuosa* was, as usual, pendant, a dark bluish colour, &c.; whilst the other two varieties were erect or upright-flowering, being in growth in every respect as described in THE COTTAGE GARDENER.

Now, is it possible for the two latter to be a sport or cross with one of the former, or *fastuosa*, or do you suppose that the seed has been mixed. *Fastuosa* being an Egyptian species, and *Wrightii*, or erect flowering, a Californian one, the latter is most likely. Nevertheless, I am highly delighted with the produce of my packet of seeds.

As regards the mode of treatment, I simply sowed the seeds (thinly) in a deep seed-pan, in April, in a mixture of loam and leaf mould. After a little artificial, yet *natural*, heat had caused them to germinate, I placed them full in the sun, in a cold pit, and planted them out direct from the seed pan early in June. By pinching the flowers off those I wished to make pot plants, I have plants of an astonishing growth for one season.

But I would advise those who only wish to grow them as specimen pot plants, to give them a free, open ground growth the first summer. When required to bloom in winter, for the greenhouse or conservatory, they require removal into a stove or forcing pit, to induce them to grow. But do not replace them in a cold greenhouse, or otherwise, too hastily. Do not do so until they have effected a nice growth, having the flower-buds conspicuously large, or the knowledge will be obtained, when too late, that by so doing you have caused a good display of flower-buds to turn blind.—WM. EARLEY, *Digswell House, Herts.*

QUERIES AND ANSWERS.

ARBOUR WALKS.

"I propose to make an arbour sixty-six yards in length, six or seven feet in breadth, and nine feet in height. I am informed that Hornbeam is the best tree to use for the purpose. I shall be glad to know about what number I should require for a walk of the size mentioned? And I shall also be thankful for any hints as to planting, training, &c.?"—G. W. H.

[There is a similar arbour walk at the Stud House, Hampton Court, of great age, full of Hornbeam trees, and romantic legends. In the olden times, trees were planted too thick for these arbours; but the Hornbeam will bear to be planted as close as four feet apart for an arbour walk,—that is, a walk with a row of trees on each side of it, feathered to the ground, and covered over head with the branches and tops of the said trees. Any time between this and February will do to plant these Hornbeams; and all they require is, to have the ground trenched for them,—say, four feet wide to begin with, and two feet deep.]

CAPE BULBS.

"In the spring of the present year, you were consulted as to the treatment of some Cape bulbs, which were grown by me in the way you then recommended,—my efforts having, I daresay, met with as much success as I expected, though only partial. One of the things which has puzzled me most, is the fact to which you then alluded, that many of them have resisted all attempts to start them during summer, and are only now evincing symptoms of commencing to spring. I therefore trouble you

again, to ask what course I should adopt with them during winter? I must remind you, that I am not possessed of a greenhouse; and, as I fear the ordinary cold frame will not suit them, I have thought it might be possible to save them by taking them in-doors during winter, in the hope of their standing through it, and growing in spring.

"Of the large bulbs, the Brunsvigia made repeated spasmodic attempts at growing during summer, shooting out an inch or so of leaf, which went down again in a few days; till about a couple of months ago, when it shot out half-a-dozen leaves vigorously for five or six inches, in which position it now stands. The Haemanthus has shown no sign of life; and I suppose the only chance for both these (perhaps for the others, too) is, to hand them over to the care of a nurseryman, to be placed in the stove. I may add, that in one instance, one of them, which bloomed in June, seems to be growing again. Will it spoil the root to dry it now?"—J. W. BOWIE.

[All bulbs tell their own tale. Our Tulips and Hyacinths grow in winter, flower in the spring, and rest in the summer, and so do the Iris and the Ixia tribes from the Cape. But the Gladiolus section flower in summer or autumn; and most of the Cape Amaryllises flower in the autumn, after a summer's rest. Your Amaryllises, having lost one year by the change from thence, will not flower for the next two or three years; and, if you will attempt to force them to bloom, or grow them in heat more than from 45° to 50° in winter, some of them will not bloom for seven years. They are bad subjects for growing in rooms; a cold pit is the proper place for them. The Haemanthus will bear stove heat, but will suffer from it in the long run. Brunsvigia will never bloom if put into the stove. Get rid of them, by all means; but keep all the small bulbs—the Ixia-like bulbs.]

HOYA CARNOSA.

"I beg to send you a report of a small plant of *Hoya carnosa*, which has flowered three times with me this summer, each time having from thirty to forty trusses of bloom. I have counted thirty-three trusses fully expanded at once. The plant is grown in a six-inch pot, and is about fifteen inches high from the rim, and nine inches through, merely coiled round some sticks. Perhaps you, or some of your readers, will oblige by giving us an account of their experience with this fine old plant?"—J. CALGATE, *Gardener to W. F. Woolley, Esq., Campden House, Kensington.*

[There are several accounts in previous volumes of how to bloom this fine old plant. Plenty of light in summer, then moderate water, all the sun possible in autumn, and curtailing water, giving no more than will keep the thick leaves from drying until showing bloom next spring, are the principal things. We consider you have been extra successful with such a small plant, and think few would be better fitted than yourself to give instruction on the subject.]

CROSS BETWEEN THE CHINESE PINK AND SWEET WILLIAM.

"By this post I send a parcel, containing some blooms of a hybrid Dianthus, raised by me from the Chinese Pink, crossed with the Sweet William. The seedlings all favour the latter parent in habit and leaf; but the blooms on the trusses and the trusses, both being considerably larger than those of the Sweet William, the Pinks are not higher than the Chinese varieties, and the stems are stronger and more erect than either the Sweet William or Chinese Pink. The plants raised from seed, sown in the spring, bloom the following summer. I have had a bed of them this summer, and it has been very effective since July. After the trusses are over (and they continue much longer in bloom than those of the Sweet William) the hybrid throws out laterals, which flower freely up to this month; I apprehend, therefore, the plants will be valuable as bedders. Some of the varieties are double and semi-double. The blooms I forward to you are the only colours I can gather now; there are some lighter ones, but none paler than a rosy pink. I saved all the first blooms for seed, and have, therefore, weakened my plants; but, notwithstanding this, the plants are making growth fast, and look very healthy, and, to all appearances, are perennial. The colours of some varieties are very brilliant, and the markings regular and distinct. If Mr. Beaton would like some cuttings for his Experimental, they shall be at his service. The blooms I

send are from the laterals, and, being late, are consequently small. I shall be glad of your opinion, when you can afford space for any comment."—THOMAS LAYTON, jun.

[We have some plants of a similar cross, which were raised three years since by a private gentleman; but whether they are in the trade, or not, we do not know. They deserve all you say; but they are not bedders,—they go off too soon for beds, and start again on the laterals. We have some good blooms that way now, and, after comparing them with your flowers, which came in good order, we can see no difference; and yet the two crosses are not just alike, for our plants, after being set last year and this, did not produce a single seed. Mr. Beaton will be much obliged by some cuttings early in the spring.]

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 56.)

[D. signifies that varieties so marked are to be used only for the dessert; K., for kitchen purposes; and C., for cider-making. Those marked K.D. are applicable either to kitchen or dessert use.]

APPLES.

LINCOLNSHIRE HOLLAND PIPPIN, K. (*Striped Holland Pippin*).—Large, roundish, and flattened. Skin yellow, dotted with green dots in the shade, and pale orange, streaked with bright red, next the sun. Eye small, set in an angular basin. Stalk short, inserted in a shallow depression. Flesh white, and slightly acid. A kitchen apple from October to December.

LITTLE HERBERT, D.—A small, round apple, covered with brown russet. Much esteemed in Gloucestershire as a first-rate dessert fruit; but is, in fact, only second-rate. Tree a shy bearer. December to March.

LOAN'S PEARMINE, D.—Rather large, oval. Skin dull green, with brownish red next the sun. Flesh greenish white, tender, crisp, juicy, and sweet. November to February.

London Golden Pippin. See *Golden Pippin*.

LONDON PIPPIN, K. (*Five-crowned Pippin, Royal Somerset*).—Above medium size, roundish, flattened, and angular, with five prominent knobs round the crown. Skin yellow, becoming deep yellow when ripe. Stalk short and slender. Eye small and shallow. Flesh yellowish white, of an agreeable sub-acid flavour. Good bearer. October to January.

LONGVILLE'S KERNEL, D. (*Sam's Crab*).—Medium sized, ovate, and slightly angular. Skin greenish yellow, streaked with dark yellow on the side next the sun. Eye small and open. Stalk short. Flesh yellow, firm, slightly acid, and sweet. Only a second-rate apple. August and September.

Lord Gwydyr's Newtown Pippin. See *Alfriston*.

LORD NELSON, K.D.—Rather large, roundish, broadest at the base. Skin pale yellow, bright red next the sun. Stalk slender and short. Eye open, set in a large, slightly plaited basin. Flesh yellowish, juicy, highly aromatic. November to January.

LORD SUFFIELD, K.—Above medium size, conical. Skin pale greenish yellow, with sometimes a tinge of red next the sun. Eye closed. Stalk short and stout. Flesh white, tender, and firm, very juicy, and briskly flavoured. August and September.

Lovedon's Pippin. See *Nonpareil*.

LUCOMBE'S PINE, D.—Below medium size, ovate or conical. Skin clear pale yellow, with an orange tinge next the sun, and marked with patches of russet. Eye small and closed. Stalk short and stout. Flesh tender, crisp, very juicy, sugary, and aromatic. A first-rate dessert apple. October to Christmas.

LUCOMBE'S SEEDLING, K.—Large, roundish, and angular. Skin yellowish green, covered with dark spots,

and streaked with crimson next the sun. Stalk short and thick. Eye small and open. Flesh white, juicy, and pleasant flavoured. October to March.

MACLEAN'S FAVOURITE, D.—Medium sized, roundish. Skin yellow. Flesh crisp and richly flavoured, resembling the Newtown Pippin. An abundant bearer, and "of the highest excellence." October to January.

Mammoth. See *Gloria Mundi*.

MANKS CODLIN, K. (*Irish Pitcher, Frith Pitcher*).—Medium sized, conical. Skin pale yellow, flushed with red next the sun. Stalk short and fleshy. Eye shallow. Flesh yellowish white, slightly perfumed. One of the best kitchen apples. September to November.

MANNINGTON'S PEARMINE, D.—Medium sized, abrupt pearmain-shaped. Skin rich golden yellow, covered with russet, and dull brownish red next the sun. Eye closed. Stalk long. Flesh yellow, firm, crisp, juicy, sugary, and aromatic. A first-rate late dessert apple. October to March.

MARGARET, D. (*Early Red Margaret, Eve, Red Juneating, Striped Juneating, Striped Quarrenden*).—Under the medium size, roundish-ovate, narrowing towards the eye. Skin greenish yellow, with deep red stripes on one side. Eye small, closed, and set in a shallow plaited basin. Flesh white, brisk, juicy, and vinous. "One of the best early apples," generally eaten off the tree. August.

MARGIL, D. (*Neverfail*).—Small, ovato-conical, slightly angular. Skin orange, streaked and mottled with red next the sun, slightly russetty in the shade. Stalk short. Eye small, set in an irregular basin. Flesh yellow, firm, and richly aromatic. November to March.

Megginch Favourite. See *Golden Reinette*.

MELON APPLE, D.—Medium sized, roundish, and narrowing a little towards the eye. Skin lemon yellow on the shaded side, and light crimson next the sun. Eye small and half open. Stalk half an inch long, very slender. Flesh yellowish white, very tender, crisp, juicy, sweet, and vinous, with a delicate perfume. A first-rate American apple which ripens in this country. December and January.

MÈRE DE MÉNAGE, K.—Large, conical. Skin red, streaked with darker red all over, except a little on the shaded side where it is yellow. Eye sunk in an angular basin. Stalk very stout, inserted in a deep cavity, so much so as to be scarcely visible. Flesh firm, crisp, brisk, and juicy. A valuable and beautiful kitchen apple. In use from October to January.

Milton Golden Pippin. See *Golden Pippin*.

MINCHALL CRAB, K. (*Lancashire Crab*).—Large, round, and considerably depressed. Skin dull green on the shaded side, and tinged and striped with dull red on the side next the sun. Eye large and open. Stalk rather short. Flesh white, firm, crisp, and briskly acid. November to March.

MINIER'S DUMPLING, K.—Large, roundish, somewhat flattened, and angular. Skin dark green, covered with dark red next the sun. Stalk an inch long, and stout. Flesh firm, juicy, and sub-acid. November to May.

Monstrous Pippin. See *Gloria Mundi*.

MORRIS' NONPAREIL RUSSET, D.—Small, conical, and with the eye placed laterally. Skin green, covered with large patches of russet. Eye small and open. Stalk short and deeply inserted. Flesh greenish, firm, crisp, juicy, sugary, and aromatic. An excellent dessert apple. October to March.

Mother Apple. See *Oslin*.

MOTHER APPLE, AMERICAN, D.—Above medium size, conical and angular. Skin deep yellow, but highly coloured, with veins and mottles of crimson. Eye small and closed. Stalk half an inch long, slender. Flesh yellowish white, very tender, and juicy; crisp, sweet, and

with a balsamic flavour. A first-rate American apple, which ripens well in this country. October.

Motteux' Seedling. See *Beachamwell*.

NANNY, D.—Medium sized, roundish, angular and ribbed round the eye. Skin greenish yellow, streaked with crimson, and often with a deep red cheek. Eye open. Stalk short. Flesh yellow, soft, and tender, juicy, sugary, and with the Ribston Pippin and Margil flavours. A first-rate dessert apple. In use in October, but soon becomes mealy.

NELSON CODLIN, K.D. (*Nelson*).—Large and handsome, of a conical or oblong shape. Skin of a uniform rich yellow, and covered with rather large dark dots. Eye open, set in a deep, plaited, irregular basin. Stalk very short. Flesh yellowish white, delicate, tender, juicy, and sugary. A valuable apple for the kitchen or even the dessert. Season from September to January.

Neverfail. See *Margil*.

New Nonpareil. See *Early Nonpareil*.

NEWTOWN PIPPIN, D.—Medium sized, roundish, rather irregular, and obscurely ribbed. Skin dull green, changing to olive green when ripe, with a brownish blush next the sun. Eye small and closed, set in a shallow basin. Stalk short, slender, and deeply set. Flesh greenish white, tender, juicy, and crisp, with a fine aroma. Requires a wall in this country. December to April.

New York Gloria Mundi. See *Gloria Mundi*.

(To be continued.)

MEETING OF THE BRITISH POMOLOGICAL SOCIETY.

A MEETING of the BRITISH POMOLOGICAL SOCIETY was held on Thursday, October 7th, at St. James's Hall, ROBERT HOGG, Esq., Vice-President, in the chair.

The following gentlemen were elected ordinary members:—RICHARD FRANKUM, Esq., 4, Burlington Gardens, London, and Brook Lawn, Woolhampton, Berks; JAMES ROBINSON, Esq., 5, Gower Street, Bedford Square, and Kinton House, near Harrow; F. J. GRAHAM, Esq., Cranford, Middlesex; JONATHAN S. CRAWLEY, Esq., Lavender Hill, near London; THOMAS ROLLS HOARE, Esq., Marlow House, Kingston; Rev. D. HEWITT, Lytham, near Preston, Surrey; Mr. ANDREW HENDERSON, Wellington Nursery, St. John's Wood; Mr. HENRY MIEES, Brentford; Mr. R. A. ARNOTT, Vauxhall Nursery, Wandsworth Road; Mr. JOHN HALLY, the Nurseries, Blackheath; Mr. SAMUEL JAMES, Patshull, Albrighton, near Wolverhampton; Mr. JOHN M'LAREN, Cardington, near Bedford; Mr. MATTHEW HIGGS, gardener to Mrs. Barchard, Putney Heath.

The Meeting, which was a full one, was so much gratified by the display of fruit made, in response to the advertisements, and by the numerous carefully filled up forms which accompanied it, that it was determined to offer in the same manner, for the Meeting of October 28:—

Premiums of £1 and 10s., for the best and second best dishes of dessert Pears, in season, accompanied as before, by forms, obtainable from the Secretary, and filled up with the desired information regarding them,—exhibitors being particularly requested to send examples of as many varieties as are in season at the time, that the Council may ascertain which are then most useful in as many localities as possible.

The quantity of fruit exhibited on this occasion being so great, it was impossible to examine them all on the day of Meeting. It was, therefore, resolved, that those in the ripest condition, and demanding the earliest attention, should be first considered; and a Committee—consisting of Messrs. Bohn, Taylor, James Fraser, Gordon, and Moore—were appointed, and empowered to meet at some convenient intermediate date, and complete such portion

of the business of the day as it was necessary to postpone. The following report, therefore, combines, in a connected form, the results of the examination at both Meetings:—

FRUIT EXHIBITED AT THE MEETING FOR THE ADVERTISED PREMIUMS.

No prizes were taken in the classes for (A) *Hardy Seedling Grapes*; (B) *Late Seedling Peaches*; (C) *Nectarines*; and (D) *Apricots*. The premiums offered under these heads will, therefore, remain open for the encouragement of such experiments, or exhibitions, in future years, as may result in the productions of the improvements desired.

There were, however, some interesting and promising exhibitions in classes B and C.

Class B.—PEACHES.

Mr. VEITCH, of Exeter, sent three *Sweet-kernelled Syrian* varieties, in the first year of their fruiting,—all having crenated leaves, with reniform glands.

No. 8 was a fine large fruit; colour pale greenish-yellow, tinged with dark red; acutely elevated at the vertex, after the manner of *Téton de Venus*, and carrying, in a very perfect state, the remains of the style; flavour sugary; flesh clingstone. It was doubted if it would in itself be an acquisition; but it was considered probable that it might be the parent of useful late varieties; as seedlings from clingstone Peaches very frequently prove melting, and in this manner many of our most valued kinds have been produced.

No. 20 was a large, handsome, melting Peach, but over ripe; it exhibited, however, evident remains of good flavour, and was considered promising.

No. 24 was large, depressed at the apex; flesh very white, excepting close to the stone. It was very unripe, although grown on a south-east wall in Devonshire. Being so late, and a clingstone, it was doubted if it would be serviceable in English gardens, even for confectionery purposes; but, as fruit was reported to be still hanging on the trees in an unripe state, it was suggested to Mr. Veitch that it should be again exhibited on October 28th.

Mr. JOHN DANIELS, gardener at Ruthin Castle, Ruthin, North Wales, sent a seedling from the *Late Admirable*. In appearance it closely resembled its parent, but in flavour and texture was not found equal to it, as it is generally known. This is one of that class of cases in which the Meeting would have been much aided if the fruit had been accompanied by examples of the parent from the same garden.

Class C.—NECTARINES.

Mr. VEITCH exhibited three *Syrian Sweet-kernelled* varieties, also clingstones, and with crenated leaves, having reniform glands. No. 22 seemed unlikely to possess any merit. No. 21 was unripe, but not unpromising as a late clingstone Peach, having a fair amount of saccharine principle; it was considered worthy, therefore, of being asked for again. No. 23 was so unripe, that it was doubted if it would ever ripen perfectly, even at Exeter.

Class F.—MARIE LOUISE PEAR.

Of this delicious variety, nineteen dishes were exhibited, all in appearance exceedingly fine, and worthy to be placed in a Royal dessert.

As, however, the object of the Society was to obtain useful information for classification, carefully filled up on the required forms, as well as fine fruit; and as the condition had not been universally complied with, the fruit sent by the following exhibitors was disqualified as regarded taking a prize:—

H. G. Bohn, Esq., Twickenham. Fruit very fine.

Mr. T. Chapman. Large, handsome fruit.

Mr. Arnold, Uxbridge.

Mr. Fox, Taplow House, Maidenhead. These were also fine fruit, but not ripe.

The following sent fruit, which, though very fine, was

not perfectly ripe, and, therefore, could not compete with what was unexceptionable in condition:—

Mr. Wm. Smythe, gardener to Lord Sons, Elmham Hall, Norfolk.

Mr. J. Wighton, gardener to Lord Stafford, Cossey Hall, Norfolk.

Mr. J. Newton, gardener to G. J. Graham, Esq., East Lodge, Enfield Chase.

Mr. W. Tillery, the Gardens, Welbeck.

Mr. Slater, the Nurseries, Heavitree, Devon.

Mr. Halley, the Nurseries, Blackheath.

These fruits were ordered to be kept for examination as they ripened; that their respective merits might be ascertained, in reference to the results of their cultivation under different circumstances; to the end that all information likely to be publicly useful shall be published in future parts of the transactions.

The above five dishes, as well as those mentioned below as perfectly ripe, were accompanied by copious information concerning the circumstances under which they had been grown, the condition of the trees, &c., all which it is the Council's intention shall be carefully examined, collated, and reduced into such a form, for publication, as shall seem most expedient after a sufficient body of such information is collected.

The Council direct that their thanks be expressed to all those gentlemen who have taken the trouble to fill up the forms so carefully and extensively, and they trust fruit generally will, in future, be accompanied by similar reports; as it is only by the extensive collection, and careful examination, of such reports that the Society can secure certain of the results they aim at, in a reliable manner,—namely, the *classification of fruits according to their adaptability to different circumstances, and information as to improved kinds of stocks, or modes of cultivation, by which desirable varieties can be made to succeed in adverse soils or districts.*

Perfectly ripe *Marie Louise*, the flavour and texture of which was tested at the Meeting, were sent by the following:—

Mr. SPOVEY, gardener to J. A. Houlton, Esq., of Halingbury Place, Essex. Fruit large, and in excellent condition, but not much covered by russet; the texture was, however, very buttery, and the flavour excellent. *To this dish the first prize of £1 was awarded.*

Miss CRAWSHAY, of Caversham Park, near Reading. Fruit very fine and large, more russetty on the outside, and in flavour very nearly equal to the above. The dish, however, unfortunately, contained one very unripe fruit, which disqualifies them for a prize; but they were very highly commended.

Mr. JOHN M'LAREN, gardener to S. C. Whitbread, Esq., of Cardington, Bedfordshire. Fruit large, in excellent condition, well covered by russet, very buttery, and excellent in flavour. *Awarded the second prize of 10s.*

The fruit sent by the following gentlemen, were fine, ripe, and in good condition. Their merits, as regards flavour, were according to the order in which the names stand:—

Mr. J. B. Whiting, the Deepdene, Dorking.

Mr. Pottle, gardener, The Grove, Little Bealings, Woodbridge.

Mr. M'Bey, gardener to Richard Elliar, Esq., Sudbrook Holme, Lincoln.

Mr. W. Divers, gardener to Wm. Moore, Esq., Staplehurst, Kent.

Mr. Brice, gardener to J. Chapman, Esq., Paul's Cray Hill, Kent.

It is but justice to mention, that Mr. Bohn's *Marie Louise*, although disqualified for taking a prize, as mentioned above, were afterwards tasted, and found so unquestionably the best of those exhibited, that they were adopted as a standard, by which to test the merits of the others.

Class G.—GENERAL DESSERT PEARS IN SEASON.

Under this head forty-seven dishes were exhibited, in twenty-three varieties, by eighteen growers, as shown by the following summary:—

GANSEL'S BERGAMOT was sent by—**MR. BOHN.** These were again the finest in the class, but disqualified for want of schedule: they were large, high coloured, very melting, and fine in flavour, with a delicious aroma. By **MR. WIGHTON**, over ripe. By **MR. KITLEY** (of Bath), large, and good flavour; but not accompanied by schedule. By **MR. M'BEG**, large, but coarse in texture, and gritty. By **MR. SMYTHE**, fine in appearance, and remarkably well coloured; but gritty and deficient in flavour. By **MR. DIVERS**, moderate in size, and good flavoured; but so far below Mr. Bohn's, which were taken as the standard of what this variety is when near perfection, that, though Mr. Divers was the next best of this variety, they were not considered sufficiently good to merit the prize.

LOUISE BONNE OF JERSEY.—By **Messrs. WIGHTON, HILL** (Keele Hall), and **TEGG** (gardener to Baron Hambro', Roehampton),—all unripe. By **MR. KITLEY**, without schedule. By **MR. WHITING**, fine in appearance, size, and colour; but rather weak in flavour. By **MR. BRICE**, very breaking in texture; not melting; deficient in flavour and aroma. By **MR. VARDEN** (of Pershore), fine in appearance, and melting, but slightly astringent. The Meeting expressed their disappointment at the result of the examination, which tended to evince the general inferiority of this variety in the present season.

A dish sent by **MR. BLACKLEY**, of Corbridge, Northumberland, being unripe at the general Meeting, came under the notice of the Committee. They were found superior in texture and flavour to any that had been tasted on the previous occasion, but slightly astringent.

BROWN BEURRE was sent by **MR. WIGHTON**, over ripe, from both *west wall* and *espalier*; **MR. NORRIS**, without schedule; **MR. SMYTHE**, fine in appearance and melting, but not high-flavoured; **MR. WHITING**, very fine, large, and melting; but, although considerably the finest, were not so high flavoured as to be quite worthy of the prize.

SECKEL was sent by **MR. KITLEY**, rather over ripe, and without schedule; **MR. SMYTHE**, unripe; **MR. DIVERS**, good in appearance, but mealy; **MR. WIGHTON**, medium sized, well coloured, and rich flavoured, second only to those from **MR. WHITING**, which were very juicy, rich, and good, and were awarded the first prize of £1 in this class.

ASTON TOWN was sent by **MR. WIGHTON**, very large and fine, but over ripe; by **MR. ELLIOTT**, of Lillishall, smaller, tolerably melting, but deficient in flavour.

BEURRE D'AMANLIS.—By **MR. WIGHTON**, over ripe; **MR. TILLERY**, of Welbeck, fine and large, breaking flesh, and good; but not first-rate in flavour.

COMTE DE LAMY.—By **MR. VARDEN**, medium sized, half melting, good flavoured; **MR. WHITING**, large, melting, but watery, and almost flavourless.

ALTHORP CRASSANE.—By **MR. ELLIOTT** (Lillishall), very large, but less thick, half melting in texture, and very void of flavour; **MR. WHITING**, full sized, half melting, and sugary,—almost as good as this variety ever attains.

BEURRE HARDY was sent by **MR. BRICE**. This is a variety comparatively little known; fruit very large, dark russet green, obtusely pyriform; flesh very melting and buttery; flavour sugary and rich, with a pleasant aroma. *To this variety was awarded the second prize of 10s.*, and it was considered worthy of being more generally cultivated. The fruit exhibited was produced from a pyramid, on a Quince stock,—soil rather sandy, on high ground in Kent.

Dunmore and Cumberland, from **MR. HILL**; **Hacon's Incomparable**, and **White Doyenné**, from **MR. WIGHTON**; **Beurre Bosc** from **MR. ELLIOTT** (Lillishall); **Duchesse d'Angoulême** from **MR. BRICE**; and **Beurre Clairgeau** from **MR. HALLY** (Blackheath), were over ripe.

Fondante d'Automne, from Mr. HILL, was large, but coarse in texture, with a strong musky flavour.

Beurré Hamecher, from Mr. SPIVEY, pasty, and deficient in flavour.

Van Mons Leon le Clerc, nice in flavour, but watery.

King Dassing, from Mr. POWELL, of Frogmore. He described it as an American Seedling, received a few years back. Fruit melting and sweet, but wanting in flavour as a first-class variety.

Beurré Langelier, from Mr. M'LAREN, in good condition, and sugary in flavour, but not more than half melting.

Class H.—MARGIL APPLES.

Nine dishes of this variety were exhibited, and the first prize of £1 was awarded to Mr. JOHN NEWTON; the second to Mr. WILLIAM DIVERS. The remaining dishes, all of which were nearly equal in merit, were from Messrs. M'BRY, SMYTHE, M'LAREN, SWINERD (Minster Abbey, Ramsgate), and SPIVEY. A dish was also sent by Mr. ARNOLD, gardener, to B. Way, Esq., without schedule.

Class I.—GENERAL DESSERT APPLES IN SEASON.

In this class thirty dishes, in twenty-five varieties, by thirteen growers, were sent for competition:—

Core's Orange Pippin, from Mr. SIMPSON, Stoke Farm, near Slough; a variety, incorrectly sent by Mr. SPIVEY as *Golden Reinette*; *Barcelona*, from Mr. M'LAREN; *Court-pendu Plat*, from Mr. EDMONDS; and *Surpasse Court-pendu Plat*, from Mr. SCLATER. These were unripe, even at the intermediate Meeting.

Ingestre Pippin, from Mr. WIGHTON; *Summer Golden Pippin*, from Mr. DIVERS; and two varieties of *Pearmain*, from Mr. M'LAREN. These were over ripe.

Golden Russet (misnamed *Cornish Aromatic*), from Miss CRAWSHAY; *Acklam's Russet* and *Golden Harvey* (or *Brandy Apple*), from Mr. WIGHTON; and *Spice Apples*, from Mr. SWINERD. These were shrivelled from having been gathered before their time, and, therefore, did not display the true characters of the varieties.

RIBSTON PIPPIN.—Of this variety five dishes were exhibited, as follows:—By Mr. SCLATER (Heavitree, Devon), although the fourth in point of size, was the first in excellence, being superior to all the others in texture, aroma, and flavour. They were awarded the first prize of £1. By Miss CRAWSHAY, these were very nearly equal to the above in every particular, and were very highly commended. Both the above were erroneously sent as *Margil*. By Mr. NEWTON, these were in good condition, and in colour and external appearance the best of the five. By Mr. DIVERS, and Mr. SWINERD, both dishes were larger, softer, and lighter coloured than the preceding; they had also strong traces of the sub-cutaneous disease which has lately been so troublesome amongst Apples.

KEDDLESTONE PIPPIN.—Sent by Mr. SIMPSON, gardener to Lady Molyneux, Stoke Farm, near Slough. These were excellent in condition, crisp, and juicy in texture; flavour a delicately-sweetened, but brisk sub-acid. This is a comparatively little known variety, but worthy of more extended cultivation. It is below the medium size, round, slightly oblate, very regular in size; stalk rather long; colour pale greenish-lemon when ripe. It was awarded the second prize of 10s.

GOLDEN REINETTE, under the name of *Golden Pearmain*, was sent by Mr. NEWTON. It was large, well coloured; and in excellent condition, firm, but tender in texture; brisk and sweet in flavour. This was examined by the Committee, and they recommended that it should be awarded an extra prize of 10s.

A scarlet variety of *RUSSET*, erroneously named *Aromatic*, was exhibited by Mr. WIGHTON. It was a very fine-flavoured dessert Apple, and in good condition, but rather dry in texture. A desire was expressed that Mr. Wighton should be invited to send it again for better identification.

HICK'S FANCY, by Mr. SWINERD. This was in very excellent condition, in size, texture and flavour. This very good autumn dessert Apple is a most abundant bearer, and deserves to be more generally cultivated.

STRAWBERRY APPLE, by Mr. WIGHTON. A prettily-striped Apple, below the medium size; bitter-sweet; and of no value in point of flavour, but suitable for ornamental dessert.

MELON APPLE, from Mr. M'LAREN. A variety not recognised by any members present. Fruit medium-sized, round, pale lemon-colour, very delicate flesh, with sweetish sub-acid flavour, and slight aroma. An Apple that would please many palates.

BALTIMORE, under the name of *Jefferson*, was sent by Mr. Powell, of Frogmore. A very tender-fleshed Apple, but rather dry, and mildly sub-acid; not high flavoured. It is very beautiful in form, round, slightly conoid, in colour pale yellow, delicately mottled with red. Very ornamental for large desserts.

SEEDLING MELONS.

ELLESMORE, from Mr. WIGHTON. Very large fruit, weighing about 8 lbs., apparently of the *Ispahan* section; very juicy, but deficient in flavour.

A *SEEDLING* of the *Cashmere* section, from Mr. TEGG, of Roehampton. He described it as a variety he had grown for several seasons, and found, on comparison with many other kinds, to be the best for very early and very late purposes,—being very hardy, a free setter, and abundant bearer. In evidence of its earliness, he stated that it was with a fruit of the same kind that he gained the first prize at the Crystal Palace in May. The fruit is of medium size, about 4 lbs. in weight, oval; colour dark green, very much netted; rind thick; flesh deep green, very juicy, and giving evidence of good flavour, although the fruit exhibited was not ripe enough to enable the Meeting to do justice to it. It was considered a very desirable kind for late autumn use.

SEEDLING PEARS.

Mr. RICHARDS, of Grimston Park, near Tadcaster, sent a *SEEDLING*, which he found superior to any other kind cultivated in the same garden, for the table, from the beginning of October to the middle of November. He also described it as an unfailing and abundant bearer. The fruit was not distinguishable in appearance from the *Louise Bonne de Jersey*, and in flavour was equal to that variety when in good condition; it is probable, therefore, that it is that variety, having lost its name, or a seedling from it, in which the parent is produced without material variation.

F. J. GRAHAM, Esq., F.L.S., of Cranford, Middlesex, brought a Seedling, called *GRAHAM'S BERGAMOT*, which was considered the most delicious Seedling Pear that had ever been brought under the notice of the Society. The fruit was medium sized, very obtusely conical; an average fruit measuring two inches and a half in its greatest diameter, longitudinally and transversely; stalk short, stout; colour dark russety green, purplish on the sunny side, inclining to pale cinnamon as it ripens; texture very melting and juicy; flavour rich, aromatic, and very sugary. [Mr. Graham subsequently sent the Secretary specimens of leaves and wood; the former are small, not exceeding two inches and a half in length, nor one inch in breadth, very delicate in substance, and much sinuated, the footstalk being nearly as long as the leaf itself, and very slender; the latter is very pale in colour, slender, but firm, and very short jointed. Mr. Graham states it to be very hardy and free from canker, and that its habit of growth is very upright, producing abundant blossom-buds,—the tree naturally forming a perfect pyramid, or cone.]

JAMES GIRDWOOD, Esq., of Falkirk, sent three *SEEDLINGS*.

No. 1, was a juicy, melting, and good flavoured Pear,

not of sufficient character to render it an acquisition on this side of the Tweed; but it was considered likely to be valuable in North Britain. A desire was expressed that Mr. Girdwood should be requested to send it again next year, with specimens of such of the best usual kinds which his neighbourhood produced.

No. 2, was also melting and juicy, but had a peculiar, slightly astringent flavour, which deteriorated its quality.

No. 3, was too unripe to be tested at either the General or intermediate Meeting.

SEEDLING APPLES.

Of these there were a considerable number, but the greater portion were so unripe that consideration of them was deferred.

Mr. HIGGS, gardener to Mrs. Barchard, Putney Heath, brought his BARCHARD'S SEEDLING, a variety which was favourably reported on, by the Society, two years ago.

Also, another variety, called HIGG'S SEEDLING, which was too acid to be likely to take a place amongst dessert Apples, and too small for kitchen purposes.

NOTE.—It is very much to be desired, that Apples and Pears generally, and *Seedlings of all kinds especially*, should not be sent to the Society, but when they are in perfection, as their merits cannot be justly estimated at any other time, and as they may suffer from the circumstances under which they are kept. The Society's intention and practice is, to do strict justice to every fruit that comes before it; but it must rest with the grower to send it in the condition in which its good qualities are most apparent.

GENERAL FRUIT.

A large quantity of fruit was laid before the Meeting for general purposes of examination, identification, &c. Of these the following were the more remarkable:—

Mr. HALLEY, of Blackheath, sent a collection of Grapes from very old Vines, on a south wall. The situation was described as on, or near, a spot on which a vineyard had existed in the time of Queen Elizabeth. They consisted of *Black Hamburgh*, fine, well-grown, and sweet,—quite equal to greenhouse Grapes generally. *White Muscadine*, bunches large, berries amber, well up in flavour. *Black Cluster*, berries larger and sweeter than any other that had been exhibited this year. It was considered that this, and similar exhibitions, tended to prove that there were still spots around London, and in the southern counties, where Grapes could, with a little care, be cultivated usefully and profitably on open walls.

Mr. KITLEY, of Bath, sent bunches of *Black St. Peter's*. Very fine, large berried, and sweet flavoured. They were said to be grown on an open wall, and the produce of a heavily-cropped Vine.

Mr. LANE sent, under the name of *Tripoli* or *Morocco*, a variety quite distinct from those names which have hitherto been laid before the Society. The bunch was large, loose, and apparently a shy setter; berry longish oval, large, and indifferently coloured; skin thick; seeds few, but large; flavour of the ripest berries rich and vinous; leaves small, stiff, and very downy.

NOTE.—It is very desirable that an effort should be made next year to settle the confusion which exists regarding the many varieties of Vines often found in old gardens. The Secretary takes this opportunity of suggesting to members, that they will aid the Society in effecting this object, if they will send specimens of any varieties they possess, other than those in general cultivation, to the last September meeting of the Society next year, accompanying them, in all cases, by leaves; and by all ascertainable information regarding them, filled up on forms, which may be obtained on application.

PEACHES.

Mr. BOHN again exhibited, in an eatable condition, a dish of fruit from his standard trees, which were agreeable for the season, and doubtless very useful for culinary purposes. These repeated exhibitions strengthen the opinion expressed in the report of a former Meeting, that

it is worth while to give attention to the production of a race of such varieties as will, in orchards, freely fruit of sufficient quality for culinary purposes. Such trees may even be used for decorative purposes, as they will have the same effect as Almonds, when in flower.

Mr. RIVERS exhibited good fruit, from pots, of *Barrington*, *Gregory's Late*, and *Déesse*,—all large, melting, and very nice in flavour.

PLUMS.

Mr. RIVERS exhibited *Reine Claude de Bavay*, from a pyramid, in the open ground; large, covered with a glaucous bloom, and in flavour very rich and delicious. Too great praise cannot be given to this excellent October fruit,—it is worthy of a place on a wall, and as a pyramid, or standard, in every garden.

A good dish of *Coe's Golden Drop* was sent by Mr. Wighton, and *Belle de Septembre*, by Mr. Rivers.

CHERRIES.

A dish of *Belle Agatha*, from Mr. RIVERS, was not brought under the particular notice of the Meeting, in consequence of a press of other matter, and as the kind had been noticed carefully at former Meetings. It, however, attracted special notice from many strangers and visitors,—sweet Cherries in October being deemed a rarity worthy of particular regard.

PEARS.

Of these a very large number of varieties were sent, but mostly of old or well-known varieties, which were chiefly useful in identification and comparison with others. Amongst little known varieties were:—

Beurré Rouge, from Mr. RIVERS, a Pear of the *Brown Beurré* section, large, more oblate than the parent, very juicy, but not high flavoured. *Beurré de Caen*, from Mr. RIVERS, fruit not distinguishable in appearance, or flavour, from a good *Brown Beurré*; but stated to be produced on a pyramid, and to be a healthy, hardy, and vigorous tree. If this variety proves to be a free bearer, it promises to be a valuable acquisition.

Gansel's New Late, from Mr. SCLATER, a small, *Bergamot*-shaped fruit; flesh breaking; flavour rough and deficient.

Jersey Gratioli, from Mr. HOGG, melting and good flavoured, from the poor soil on the Hastings Sands, where Peaches and Apricots will not grow.

Doyenné Blanc, good flavoured and deliciously melting.

The Secretary reported to the Meeting, that Mr. John McLaren and Mr. G. Swinerd, had labelled and packed their fruit with special care and method, and he was directed to notice it in the report, with an expression of the thanks of the Council to those gentlemen.

At another Meeting of this Society, held on Thursday last, in St. James's Hall, nine new members were elected, and premiums were awarded for the best dish of any variety of Pear. A very strong competition took place from all parts of the country, and the first prize of £1 was awarded to Mr. Tiley, nurseryman, Bath, for *Marie Louise*; and the second, of 10s., to Mr. Mould, gardener to P. Rose, Esq., High Wycombe, for *Suffolk Thorn*.

There was a large quantity of fruit present; but the Meeting was not so numerously attended as usual, on account of the unfavourable state of the weather on that day.

A lengthened report will be given in our next.

THE MUSCAT HAMBURGH GRAPE.

It will be remembered that this was the variety which took the prize at the Pomological Society, as being the best new Grape having a Muscat flavour. At the time the

Society made the award, it was stated that this variety would ripen with as low a degree of heat as the *Black Hamburgh*; but an opinion having got abroad, which is believed by many, that it will not ripen in a house without the aid of fire heat, which the *Black Hamburgh* will do, considerable disappointment has resulted. It is very satisfactory for us to be able to state, that, at the last meeting of the Pomological Society, Messrs. Henderson, of Pine Apple Place, exhibited a bunch grown upon a shoot, which, during the summer, had been introduced into an ordinary greenhouse, the plant undergoing no cultivation whatever, and receiving no heat, except one evening during the present month, when frost was expected. The berries were quite ripe, and possessed the marked musky flavour.

MINERAL DESTROYER OF SNAILS.

IN accordance with our promise given at page 60, we extract the following from *Chambers's Journal*:—

"At a late meeting of the Academy of Sciences at Paris, M. Millot-Brûlé exhibited a black powder, obtained from a purely natural substance, which, should it come into general use, will gladden the hearts of gardeners. If you have a plant or shrub that you wish to preserve from noxious creeping things, you draw round it a circle of this black powder, and not a snail, or slug, or worm, or maggot will attack it, for no sooner do they touch the black powder than they are thrown into convulsions, which speedily kill them off. A whole bed or plot may be sprinkled with it, and with the like results, and without injury to the garden. On the contrary, the powder is a good fertiliser. It is said to be a specific against the Grape disease, and that if blown lightly into an infected bunch, the *oidium*, or fungus, is seen to curl up and perish—killed as surely as the snails.

"The composition of the powder is no secret; it is nothing but a species of lignite—sulphur-coal, as the Germans call it—ground fine. Large beds of it exist in many parts of the Continent. Ardennes abounds with it; and it was with lumps dug from that region that M. Millot-Brûlé made his experiments. It is found in extensive deposits at Oppelsdorff, near Zittau, in Saxony, where for some years past it has been turned to account for the preservation of timber. The sulphur-coal, to give it the local name, is reduced to powder, and made into a bath with water. The wood to be treated is plunged into this bath, and left there for a time without any mechanical pressure, until it has undergone a change which partakes of the nature of mineralisation. Mere contact with the lignite appears to suffice; and we are told that beams which have been used in the workings for thirty years are sounder and more likely to last now, than when first put up. In Saxony, the railway sleepers are prepared with this substance, and with manifest advantage."

THE YELLOW WAGTAIL.

A YELLOW Wagtail has been amusing himself by thumping against a window, similarly to the one described by "Z. A., Dartmouth." A zinc water-spout crosses before the window, eight or ten inches distant; the Wagtail jumps from this, and raps the glass hard with its beak, sometimes from the window-sill. It does not appear much irritated, as if fighting with a supposed antagonist, and it cannot be for insects. Drawing the blind down does not affect its operations at all; neither does a stuffed hawk placed against the glass inside. It sometimes attacks another window for a short time. Some years ago one made a similar attack, but that was a black and white Wagtail; and in the spring of the year it persevered for some weeks, and then discontinued. —W. M., Hanley Castle.

TO CORRESPONDENTS.

PEAT SOIL (*A. Subscriber*).—For potting purposes, it is best to keep it under cover. There you may always have it as moist, or as dry, as you please, by using or withholding the contents of the watering-pot.

COTTAGE GARDENERS' DICTIONARY (*C. W. H. M.*).—You can obtain it, we believe, either in numbers, or in a volume, of Kent and Co., Pater-noster Row.

REMOVING AN ARAUCARIA (*Sophia*).—It may be safely raised, and ought

to be so, at this season. We have just been moving large Conifers. By digging a broad trench round it, at three feet from the stem, and picking away underneath, it may be lifted to a foot nearer the surface without injury. Yews do not suffer from a bleak exposure. The old Yew is more likely to be suffering from want of nourishment. Try what putting some fresh, rich earth about its roots will do.

IMPROVING LIGHT SOIL (*A. would-be Gardener*).—If you will refer to a recent number (522), at page 415, under the head "Club Root," you will find all that we can advise. Follow the directions there given.

JOINT OR HOT-WATER PIPES (*Kate*).—We should say strong hemp string and red lead are the best materials, combined, for plugging these joints.

MOVING GYNERIUM ARGENTEUM (*A. Subscriber*, *Erit*).—Leave your three-feet high plants as they are to the end of March, and then lift them carefully with balls, and plant them in front of some evergreens, so as to have a good dark-green background to set off the white plumes of flowers; and if you could see them thus from the parlour windows, all the better. See the plants are well supplied with water for the first three months after transplanting.

NEW MELON (*J. Carter and Co.*).—Your seedling Melon (*Excelsior*) is a remarkably fine one; though so late in the season, and the specimen sent is not nearly ripe, it is very richly flavoured. It is of medium size, and inclining to oval. Skin white, and very much netted, more so than in *Bromham Hall*. Flesh green, very thick, ripening close up to the rind; core unusually small. If, as you say, this Melon ripens with very little, or no bottom heat, it is one of the most valuable varieties we know, for all its properties are excellent.

NAME OF WILLOW (*Rathleigh*).—The sprig sent is certainly taken from the Weeping Willow, *Salix Babylonica*. Some botanists are of opinion that the Napoleon Willow is a distinct variety of the *S. Babylonica*, and call it var. *Napoleana*. This is a matter of opinion. There is no species of Willow indigenous to St. Helena. But about the year 1810, when General Beato was Governor there, he, being fond of planting, had a great many forest trees and shrubs introduced from Great Britain, and among these was the *Salix Babylonica*, which has since been called "Napoleon's Willow." Several trees of this grew among others on the top of a hill near a spring, and having attracted the notice of Napoleon, he had a seat placed under them, and used to go and sit there very frequently, and have water brought to him from a spring near the spot. Cuttings were planted from this tree outside the railing which surrounds the first grave of this great man, but, from the multiplicity of visitors plucking pieces from the so-planted trees, they are kept in a stunted condition.

NAMES OF PLANTS (*A. K.*).—1. We cannot make out. 2. An annual; a deep-coloured variety of the *Chrysanthemum coronarium*, which, nearly thirty years ago, was called in the nurserymen's lists, the new Golden Chrysanthemum. 3. *Cytisus racemosus*. An ornamental greenhouse shrub. 4. *Diplatiris tenuifolia*, var. *variegata*. The species *Diplatiris tenuifolia* is an English perennial plant, of little beauty. Why should not such common plants do well out in the open borders in Cumberland during the summer months? (*B. Sanders*).—From the very small specimen sent, we should say it is *Fuchsia coccinea*. We have no knowledge of a *Wilsonii* among the old species, or even among the new hybrids. The plant sent with it is one of the prettiest of the Michaelmas Daisies, *Aster lividus*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

NOVEMBER 30th and DECEMBER 1st. GLASGOW. Sec., Mr. R. M'Cowan. Entries close November 17th.

DECEMBER 7th and 8th. NORTH DURHAM. Secs., R. C. Coulson, J. T. Duncan, and T. Wetherell. Entries close November 22nd.

DECEMBER 8th. WILTSHIRE. Sec., F. W. Phillips, Devizes. Entries close November 30th.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

DECEMBER 29th and 30th. BURNLEY AND EAST LANCASHIRE. Sec., Angus Sutherland. Entries close December 10th.

JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

N.B.—Secretaries will oblige us by sending early copies of their lists.

PARTRIDGE SHOOTING.

(Continued from page 29.)

DID you ever wake up in the morning with the consciousness that you had behaved ill, or made a fool of yourself, on the previous evening? Did you ever lie awake with your eyes closed, to shut out exterior objects, while you sought to justify yourself, and at last proved to your entire satisfaction that everyone was

wrong but yourself? When you had hit on your defence, did you ever see it crumble, bit by bit, till the first impression of your folly returned stronger than ever? If you have not, I have, and experienced it all on this occasion. I awoke early, and got up after the mental process I have described above. No part of the house was ready for me to sit down, and, wishing to be alone, I went through a back door into the yard. I would clean my gun. I found my brother-in-law's man about to do so, and told him I preferred doing it myself. He smilingly gave it to me, while he cleaned his master's. I felt that I had done enough to offend everyone the night before, and, therefore, was disposed to make what friends I could; and, let me own it, I wanted tidings of my dog. Therefore, I opened a general conversation, and gradually brought it round to our sport the day before.

"You have had charge of Tippoo," said I, giving the man five shillings.

"Yes, Sir, and thank you; he spoiled our sport yesterday; but, after all, I don't think so badly of him; and young master is hasty. He wants patience, you see, Sir. 'Tis with dogs as with hunters, both are temperate enough till one hears the gun and the other the hounds,—then there's no holding them. Patience, Sir, will do a great deal with both; and I think you and I by ourselves could make a good dog of him."

"So do I; and, by the way, I dare say you have had a great deal of trouble with him." And with that I gave him five shillings more.

"You are very good, Sir. Do try to get you and I to go out by ourselves. Only don't say I said so."

"But do you know of any plan to cure him?"

"Let me alone, Sir, I will do it. He won't be the first I have cured."

This was a bright spot in my day. What a triumph it would be if I tamed this dog! I was sure I could.

I cleaned my gun, and returned to the house. I did not know how to meet the family. I was evidently in the wrong, and, therefore, wished them to make the first overture. I would have apologised freely, if I had been in the right; but it is so hard to admit you are wrong.

When I entered the breakfast-room, my wife was there. She, dear good woman, had no frowns for me, and we chatted pleasantly on every subject but shooting and the previous evening, till the family were assembled. All met me kindly; but there was the feeling that I had behaved ill over-night, and perhaps another, that I was not likely to make their relative very happy, and that caused a little coolness at the breakfast-table. But the coolest of all was my brother-in-law, whose good temper had, till then, been proof against everything. My wife tried very hard to make all things pleasant.

Now, I had determined not to apologise in any way, but, as I was in the wrong, I magnanimously resolved to forgive them all, and take no notice of the previous evening. I also wished to restore cordiality for every reason, but more particularly on account of my wife, who evidently felt the *gêne* there was at the breakfast table.

"You will be glad to hear," said I, speaking to no one in particular, "that Tippoo came home last night."

Some of the faces smoothed a little, but there was no answer beyond my wife's, who said, "She was glad to hear it."

I would not be beaten, and, therefore, asked my brother-in-law where we should shoot that day. His answer was, "I could go where I liked, but he would be unable to go with me, as he had an engagement." I am not usually a dissembler, but I confess I was very glad, although I said I was sorry. My reasons were:—First, I wished to cure my dog, and to try my own plan; next, I thought I should shoot better by myself.

As soon as breakfast was finished, I hurried to the yard, where I found my brother-in-law, evidently giving instructions to his man. I cared not for that, as I was delighted at the thought of my day by myself. I was asked, before I started, about luncheon and dinner, but begged I might interfere with nothing, as I meant to have a long day, and my return was uncertain. I could get luncheon at the Oatsheaf, which was the farthest point, and about three miles from home.

Full of the importance of being the only gun, and head of the day, I called to the man, and we started. My dog came readily, but did not walk at our heels. The man carried a long rope, and a heavy, but not long stick. I could not help asking what the rope was for; and, with rather a cunning look, he said, "I should see." "Mind," said I, "I mean to have a long day."

"Very well, Sir," was the answer; "then, if you'll allow me,

I think we had better take the outside by the manor down, and bring the other back."

"Very well," I said, "let us start."

This order of beating involved a long walk before we began. Both of us made much of the dog, and coaxed him in every way, but he kept his distance.

Arrived at our starting-point, the man said, "Now, Sir, we must catch him; but I think I shall do it better by myself. He knows me." Accordingly, I got over the hedge, out of sight. I heard a rustle and a wince, and then my companion's exclamation, "All right." Anxious to see what the process was, I looked, and saw Tippoo with a cart-line tied round his neck, and trailing many, many yards behind him. I suppose my looks indicated that I did not much admire it.

"Never mind, Sir, you will see how it works."

"But how," said I.

"Don't you see, when he gets a point, I step up, and tread on the rope. When you shoot, he rushes, and it pulls him up short. That's my plan."

Well, we started in the field where he distinguished himself so much on the first day. There was no doubt of finding birds. I got over the gate, so did the man. Tippoo never offered to follow. We called, we whistled, we coaxed, in vain. My companion suggested to walk the ground without a dog; it did not suit my plans, as that was not curing him. Nevertheless, I did it. It does not improve an indifferent shot to be crossed in his purposes, and I missed right and left, when I should have killed both ways. The gun brought the dog; he rushed past me just as I was preparing to load, and vexed at the sight of him, I thoughtlessly struck at him with my ramrod. It broke into three pieces. I felt my passion rising. My teeth clenched till they seemed to stick together, and I was about to break out, when I saw the man standing in front of me,—he was smiling. Decidedly everything was against me, but I would not be beaten, and in the mildest tone I said, "Very foolish of me, fortunately I have another at home, I will fetch it." But then I thought I might be laughed at; whereas, if I went home later with a reformed dog, and a "good bag," I should be better able to bear it. I, therefore, sent the man, telling him to ask my wife to unlock my gun-case, and take out the spare ramrod. I desired him to make as much haste as possible. "And the dog, Sir?" "You may leave him with me." I chose a shady bank, where I was protected both from sun and from sight, and there I sat and pondered on my adventures.

The man seemed a long time away, and so he was. His explanation was, "Missus was out when he got home, and he had to wait." He had not, however, lost his time: he was not tipsy, but he had had drink enough to make it quite apparent. I had not cared for the dog while he was away, nor had I troubled myself as to his whereabouts. I now saw he had accompanied the man, and returned without the rope.

I was vexed and ill-tempered, and it required all my self-command to keep it down; but at no time was it so tried as when the man was catching the dog to replace the rope. His half-drunken cunning, his fancied 'cute remarks, and his admonitions and threatenings to the dog, almost drove me mad.

But I loaded and started. My visions of pleasure were fast disappearing, and it was only obstinacy that made me keep on. As I walked on, however, the exercise did me good, and my spirits rose. I determined to make the best of it, and to extract pleasure, if possible.

We entered a large Swede field, and I begged the man to be careful in promoting my sport. He gave me a knowing look, something between a wink and a nod, and said, "All right, Sir." Birds rose directly. I shot coolly, and killed two of them. I expected the dog to rush in, and was not disappointed. Then began a scene, my half-drunken man rushed after the end of the rope in all directions. Whenever he caught sight of it, he jumped at it; then he hurled his stick at the dog, shouting all the time, as well as his breathless state would allow him,—"Tippoo; down, you beast; come here; drat you; what are you at; wait till I catch you." It ended in a mighty jump at the cord, when, alighting on a Swede, he fell prostrate. He arose after a few minutes panting from his exertions. "Once or twice more, Sir," he said, "will cure him." I answered coolly, "I hope so." My mind was now fully made up. I sent the man home with the dog, I walked about to get rid of my vexations, and was successful in my sport.

When I got back, I found all the family at dinner. They were evidently surprised to see me. The man had not reached home,

I at once gave them an account of all that happened. I apologised for my rudeness on the previous night, and shall always recollect that afternoon and evening as among the pleasantest I ever spent. A load was evidently removed from all, and I had regained their good opinion.

Lest anyone should wish to know more of Tippoo, I may tell them, the man lost him on his way home. It was supposed he was stolen by some men who were in a public-house, where he spent the afternoon, after he left me.

N.B.—He was a large, heavy dog, somewhat like the old engravings of the "Spanish Pointer." He was nearly white, having only one yellow patch on the body, and one ear of the same colour. No reward was offered.

CRYSTAL PALACE WINTER POULTRY SHOW.

The old adage of "sticking to one's friends" was never better carried out, than by Mr. Houghton, in the excellent schedule of prizes he has put forth for the Crystal Palace Winter Show. He has truly supported those classes that support the exhibition. He has given fifteen prizes to the Spanish, and nineteen to coloured and White Dorkings. These classes, from their numerous entries, deserved this encouragement; and we hope a large increase will be his reward. He has also, we believe, for the first time at any show, made a class for the Buenos Ayrean Ducks; and, in that for any variety, has invited possessors of rare sorts of wild fowl to enter into competition, by allowing them to be shown in pairs. In each of the two first classes, Spanish and Dorkings, he has formed two new ones,—viz., for two hens, and two pullets, wisely following the Birmingham example. These enable many to exhibit who would otherwise be prevented. The entries are open till the 11th of December, thus giving competitors the advantage of study at Birmingham. The sums offered for competition amount to £360.

Recollecting the great improvement made last summer by altering the place of the show to a wing, where it was quite distinct from any other part of the Palace, and believing, as we do, that the entries will be greater than they have ever been, we look forward to it as inaugurating the new year with a great and successful show. It seems its province to do so, just as "the show" at Birmingham closes the large exhibitions for the departing year. The punctuality, strict integrity, and painstaking of both, deserve all the success and encouragement they meet with.

Councils and Secretaries have done their parts, and it only now remains for exhibitors and the public to do theirs.

BLACK COCHIN-CHINA FOWLS.

Can you, or any of your readers, account for the omission from almost all poultry show prize lists, of that splendid fowl, the black Cochin? I have just seen the Crystal Palace Schedule of Prizes for the Winter Show, and find the same omission in that. Your insertion of this may obtain an answer to my question, and it might also draw the attention of poultry show committees to the subject.—SENOJ.

[*"Aide-toi, et les shows t'aideront."*] This is the best answer we can give you. The black Cochin classes have died of inanition, and all classes with similarly deficient entries will do the same. They have not been so strong in entries, as a separate class, as they were when they showed among the "varieties." Nine pounds were often offered as prizes, and three pens were entered at 6s. each. A clear loss to the committee of eight pounds.

If those who undertake the management of exhibitions find that any class entails a continual loss, they are bound to give it up, and the birds must be shown among other varieties. Wherever their numbers justify the re-formation, or the formation of a class, it will always be done; but, to effect this, those who possess the birds must enter them.]

THE TUMBLER PIGEON.

I AM thankful to Mr. B. P. Brent for the opportunity he has afforded, of making myself more generally understood, in regard to the length of beak of the House Tumbler Pigeon. I find, on measuring from the iris of the eye to the quick of the beak, that they will average an inch in length.

In reply to his inquiry respecting the flying Tumbler, our

birds are not trained to high flying, although I doubt not but those we consider our inferior birds would do for that purpose. But the birds that we esteem most could not rise so high, and we think they do well if they keep on the wing for three or four minutes.

What I meant to convey by the word "drop," was until the birds settle. I do not admire those birds that tumble so close as to lose all control over themselves, and, in consequence, gradually come to the ground.—JAMES PATON.

OUR LETTER BOX.

HATCHING BY HOT WATER (*Nemo*).—The water cannot circulate freely with all the pipes united like a gridiron. Let it be one pipe, separate throughout its length, but doubled in a similar zig-zag form, and the water will circulate more freely, especially if the return pipe enters at the bottom of the boiler instead of at the top. We know of no oil-lamp that will give out more heat than an argand; but we do not think that even that would give sufficient heat. A small circle of gas jets would be effective.

GAME FOWLS WITH TOPKNOTS (*T. H.*).—Your Black-breasted Game fowls would be disqualified by the topknot, which indicates a cross with some other breed. If you refer to our No. 512, you will find all the points of Game fowls discussed.

EXHIBITING GAME BANTAMS (*J. C. H.*).—At early chicken shows, Game fowls of every class are admissible to competition without being dubbed; but adults, and even chickens, must be dubbed for winter shows. It is the rule in all Game classes, save the exception above mentioned, that the cocks shown whole are disqualified. The Duckwing Bantams have been bred from the larger breed, but formed by constant and careful selections of small birds; then one cross of another Bantam, which is afterwards bred out. The markings of Game Bantams should assimilate as nearly as possible to that of the larger birds.

CREWE POULTRY SHOW.—In the "Sweepstakes Class," "Mr. Worrall" is reported as taking the second prize. It should be "Mr. R. Whittam, Burnley." Mr. Worrall's bird was not sent, and, in error, Mr. Whittam's bird was put into the pen with Mr. Worrall's number in the catalogue. Thus the mistake in printing.—DANIEL MARGETTS.

INFLUENCE OF THE MALE BIRD (*Amateur*).—How long this continues is a disputed point. In the Turkey it prevails for the whole sitting of eggs, though the hen has been with the Turkey cock but for one day. In one experiment the chickens took after their male parent, a Game cock, until the tenth day of the hen's separation from him. After a fortnight, probably, you would be sure to have your hen free from the strain you wish to avoid. Your fowls show the early symptoms of roup. We have often given in our pages the treatment we recommend and have found efficacious.

SICK CANARY (*C. E. K.*).—Give it abundance of green groundsel, lettuce, and canary seed, but no hemp seed; plenty of sand, and a cool, not a cold room. Giving the bird "soft biscuit, soaked in sherry," was enough to make the bird "tumble about." They are feverish during moulting time, and need no unnatural stimulants.

PIGEONS IN A CONFINED SPACE (*A Liverpool Subscriber*).—1. In breeding the high fancy birds, it is advisable to separate the sexes in winter. 2. Twenty or thirty Pigeons can, with proper management, be kept healthy in the space proposed; but, if of a delicate variety (our correspondent does not say what sort his are), would it not be better to give the hens, being the more tender, the advantage of the area and bath? 3. It will not be necessary to glaze the door, unless the birds are very delicate, and the weather should prove very severe. 4. Wheat and Indian corn may be good for moulting time; but, to put them in hard condition for winter, we advise small hard beans, with an occasional change of tares and maple peas: rape and mustard seed are too oily and pungent for the season of rest. 5. The shifting of the birds would not be absolutely necessary, and might cause fighting and disturbance; but, if they are large or pugnacious birds, the smaller place may be found too confined for thirty cocks. It will, however, be necessary to provide sufficient resting places, shelves, or pens, for the cocks, in order to prevent fighting.—B. P. B.

LONDON MARKETS.—NOVEMBER 1ST.

POULTRY.

The supply of poultry remains abundant, and the demand very small.

	Each.	Each.	
Large Fowls	4s. 0d. to 4s. 6d.	Hares	2s. 0d. to 2s. 6d.
Small ditto.....	3 6 " 4 0	Partridges	0 6 " 1 0
Chickens.....	1 9 " 2 0	Grouse.....	1 9 " 2 0
Geese	6 0 " 6 6	Pigeons	0 6 " 0 7
Ducks	2 6 " 2 9	Rabbits	1 3 " 1 4
Pheasants	2 0 " 2 6	Wild ditto.....	0 9 " 0 10

WEEKLY CALENDAR.

Day of Month	Day of Week	NOVEMBER 9-15, 1858.	WEATHER NEAR LONDON IN 1857.					Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.							
9	TU	PRINCE OF WALES BORN, 1841.	30.401-30.294	54-47	N.E.	—	10 af 7	18 af 4	6 af 6	4	16	2	313
10	W	Chimonanthus fragrans.	30.559-30.389	53-35	E.	—	11 7	17 4	9 7	5	15	56	314
11	TH	Chimonanthus sinense.	30.668-30.628	54-25	E.	—	13 7	15 4	10 8	6	15	49	315
12	F	Chrysanthemum sinense.	30.694-30.591	53-32	E.	—	15 7	14 4	33 9	7	15	42	316
13	S	Cinerarias.	30.504-30.363	54-31	N.E.	.01	17 7	12 4	47 10	2	15	34	317
14	SUN	24 SUNDAY AFTER TRINITY.	30.302-30.170	52-38	N.E.	.05	18 7	11 4	morn.	9	15	25	318
15	M	Citriobatus multiflorus.	30.271-30.199	50-38	N.E.	—	20 7	9 4	1 0	10	15	15	319

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 50.3° and 35.7°, respectively. The greatest heat, 63°, occurred on the 12th, in 1841; and the lowest cold, 18°, on the 9th, in 1854. During the period 109 days were fine, and on 108 rain fell.

GARDENING OPERATIONS FOR THE WEEK

KITCHEN GARDEN.

ADVANTAGE should be taken of the present fine weather for trenching ground; and if there is any fear that the texture of the soil may be injured by a large quantity of the subsoil being brought to the surface at one time, there is no danger to be apprehended from a small quantity; and stir up the subsoil where it is, for the more free admission of roots: we are sure that many old gardens would be greatly benefited by the operation.

ARTICHOKE.—Protect the roots from frost.

CABBAGE.—Draw earth to the stems, and hoe between the rows. If slugs attack the plantations, they must be decoyed by strewing Cabbage leaves between the rows, and examining them every day, when the whole may be soon shaken into a pail of hot water, or lime.

CAULIFLOWER.—As all that are now producing heads are very valuable, they should be preserved with care, by digging them up, and planting them in a spare pit, or by hanging them up in a dry, cool place.

CELERI.—Earth-up all intended for winter use, to a good height, when the soil is dry.

ENDIVE.—Some of the most forward to be taken up, and planted in a frame, for a supply during severe weather. To be kept rather dry, as sudden frost, after heavy rains, very frequently and injuriously affects advancing salads of various sorts.

PEAS and BEANS.—Sow, on a dry and warm border. *Sangster's No. 1* and *Daniel O'Rourke* are good early Peas, and *Mazagan* are good early Beans.

RADISHES.—Sow the *Short-top*, in rich soil, on a warm border.

RHUBARB.—If a few dishes are wanted early, some old roots may be taken up, and planted in boxes, or pots, and removed to a warm place.

FRUIT GARDEN.

FRUIT TREES.—Continue the pruning and nailing. The system that we have frequently advised of stopping them in the growing season will now render the use of the knife a comparatively light and easy task. Also, the preparation of the borders and quarters for the reception of fruit trees should be completed, and the trees planted in the course of the month.

GOOSEBERRIES and Currants.—When the trees have been pruned, strew some fresh slaked lime around them, and slightly dig it in: it is recommended as an effectual mode of keeping the bushes free from caterpillars during the summer.

FLOWER GARDEN.

CARNATIONS and PICOTEES.—Prepare the compost for spring potting. It should consist of two-parts turfy loam and one-part well-decomposed horse or cowdung, with a small portion of lime rubbish, or road sand, to sharpen it. To be placed in a ridge on a height, where it can have the benefit of both sun and air, and frequently turned over in frosty weather, and all grubs and wire-worms destroyed.

worms destroyed. To be protected from heavy falls of rain or snow.

DAHLIAS.—Where the late frosts have destroyed their flowers and foliage, they should be taken up carefully, and removed to some dry shed; the tops cut off within a foot of the root, and turned top downwards for a week or ten days, for a portion of the sap, that generally exudes, to pass off without injuriously affecting the root; and then to be stored away in their winter quarters.

FUCHSIAS.—Protect the roots with a coating of coal ashes, or moss.

HERBACEOUS BEDS and BORDERS.—Dig, and divide the plants where they are too large. Continue to plant shrubs, and also to prune them where necessary. In the disposal of the various shrubs, let their natural and peculiar habits and character be duly considered. If the shrubberies are to be made neat, let it be done with the hoe and rake, as cutting and turning up their roots with a spade is most injurious to them.

HOLLYHOCKS.—Any choice sorts, of which there is not a sufficient stock established in pots, should be taken up and potted. If wintered in a cool frame, they will be useful for furnishing cuttings in spring. It is hazardous to expose them in the open ground to the severity of winter.

PINKS and PANSIES.—Those in pots to have all the air possible: the frames to be never closed, except to exclude heavy falls of rain and hard frosts.

PITS and FRAMES.—Keep the plants free from dead leaves, water in the morning of a fine day when any of the plants require it, and keep the lights drawn off when the weather will permit.

ROSES.—Plant. No time is better than the present for all the different varieties. They delight in a good stiff soil, trenched to the depth of two or three feet, and well incorporated with rotten dung. The soil should be pressed firmly round the neck of each stem, and at the same time the stems fastened to a strong stake, to secure them from being injured by the winter winds. The surface, as far as the roots extend, to be covered with a coat of rotten dung, to protect them from severe frosts.

WILLIAM KEANE.

THE ORCHARD-HOUSE.

A GENTLEMAN who had taken a short lease of a house and garden, in Surbiton, wished to put up an orchard-house, but he thought the landlord would claim it as a fixture at the end of the lease. Then, said I, "Why not put up the orchard-house without fixing it, as the law of landlord and tenant requires?" In the year 1836-7, I directed the erection of a large number of hothouses, nearer London than Surbiton, for a tenant, who meant to leave at the end of his lease, and remove all his glass-houses to another place. But before the end of the lease the said tenant came to the end of his tether, and was "sold up," as the saying is. Therefore, I was just as wise as when we began, about the law of fixture in respect

to plant-houses; and even now, although I live in the midst of a large host of lawyers in Surbiton, I confess I should be puzzled to give advice which would keep a tenant, sure and certain, clear from the said law on the subject of garden fixtures. The law opinions which I can obtain here are as various as are the kinds of plants for a greenhouse. I can make nothing out of them. Hence it is that I broach the subject in these pages, and ask the advice of the editor and all the contributors, and any readers who may have known cases of dispute which have been legally decided. Opinions I do not want,—I have as many of them as would puzzle any lawyer,—I only want an answer to the question,—Do you happen to know any cases of disputes about removing plant-houses, or vineries, between landlord and tenant, and how the law decided between them? Nothing more. I should like to hear all about the matter before the end of November, or at any rate before Christmas.

The legal instruction which I received about the new hothouses, twenty years back, was to put in the foundations in brick, and to put boards, or planks, on the walls, just above the ground line, and to screw the framework of the houses to these plates, as we should call them. If any dispute arose, I was told, the landlord could claim no more than the brick foundations; and, on that score, an orchard-house, built after Mr. Rivers' plan, might be claimed, all but the roof; and a roof built that way is more tiresome to take down, at the end of the lease, than such a structure as I would recommend to a moneyed man.

I never would build the roof of any garden-house—except for permanency—on the principles of “all rafters and no lights,” as my forcing foreman said, when he first read, “The Orchard House,” by Mr. Rivers. Round London, and all large towns and cities, there are hundreds who are “here to day and off to-morrow,” and who want to be able to pack up their greenhouses, orchard-houses, and other plant-houses, as easily as the rest of their furniture, or sell them at a great sacrifice.

With my practical knowledge of these facts, I have another question to ask hothouse builders, and I name Messrs. Weeks, Grey, and Ormson;—I mean the three firms, as I know the principals personally, and because they advertise in THE COTTAGE GARDENER;—but I do not confine the question to them, it is open to all. The question refers to an orchard-house, 60 feet long and 20 feet wide, a span-roof; walls and ends, up to 5 feet, to be bricks, or posts and boards, like Mr. Rivers' first plan; the two gables, or ends, to be glass; and the roof to be in “lights,” or sashes, like a common viney. Can such a house be put up *without rafters*, and without any posts, or props, to keep up the roof? The first temporary house of this kind, which I have seen, was a span-roofed one: it was the best part of 100 feet long, and 50 or 60 feet wide, and covered with canvass, for a birthday-dinner, when the present Lord Lovet came of age, nearly forty years since. It was erected in the court before Beaufort Castle, and I helped to form the decorations with flowers and evergreens.

The construction was in this wise. A row of Fir-tree posts, with the bark on, 20 feet high and 10 feet apart, was planted down the centre of the court, and a row on each side of the court, and across both ends, 10 or 12 feet high. The trees were taken up, as for transplanting, with their roots, and the only difference from planting was, that the roots were sunk two feet in the ground. A “wall plate” was nailed on the top of the side and end posts all round, and a ridge piece, or plate, on the top of the centre posts; from, or rather on, these “plates,” rafters were nailed, at short intervals; and the whole was covered with canvass, and lined inside with finer hangings. When the whole was finished, all the winds in the Crimea and Caucasus could not shake or move it one jot. The Messrs. Edgington, Rivers, and Weeks, could not make a stronger thing of it, with all their skill and great practical understanding; and if they attempted to drink bumper for

bumper with the Highland chieftains inside, with the late Duke of Gordon, then Marquis of Huntley, at their head, they would have been heels over head before the cloth was removed.

Now, if you imagine glass, instead of the canvass, for such an erection, nothing could be cheaper, or more strongly put together. But then it was all a fixture; and I question if the lawyers would allow one inch of it to be removed, even by a Highland chieftain, unless it was either on his own ground, or with the consent of the landlord: therefore, anything with props to keep up the roof will not answer the purpose I have in view. You must make it all to screw together, so as to be capable of unscrewing, packing up on a cart, or railway truck, and of being set up at Sydenham, or farther off, when its time at Surbiton is ended.

I find a crying necessity for such portable houses among an influential class of our subscribers in these parts; and I know that, without the roof is made in sashes, in the usual way, there is no end to the bother and breakage of glass when they are to be thus removed. Also, that if we can get rid of rafters in the first instance, a serious item of expense will be got rid of at one dash; and, in the next, a greater amount of light,—say, one-sixth part,—than is possible with rafters, will be obtained. Then, on the authority of Mr. Rivers, the more light the larger the ventilation; and the more air is admitted to these houses, the less danger there is of scorching from bad glass, and the more healthy the foliage,—in all which I perfectly agree, and with all who advocate such wise measures. I often said that my own conservatory, which is 20 feet high in the centre and 18 feet high at the sides, and span-roofed, is cooler *on a calm day* in July than the open air out in the garden. My ventilation is so perfect as to make a strong current, and that current, on a calm day, makes all the difference between the heat inside and out. This house is neither 100 feet long nor 20 feet wide, and was called a “poking place” by Mr. West, of the Waltonian; yet I proved a principle in it which has been verified at the Crystal Palace, at Sydenham. I want portable, well-ventilated, and well-lighted houses, from the “poking” dimension up to 100 feet, and all without rafters, or internal supports, both on account of more light, and to shun lawsuits and all wrangling about fixtures. I may say, however, that I know the thing can be done; I only want to know who can do it, that there may not be any chances of infringing the patent laws?

This brings me back more than a dozen years, to Mr. Thomson's retort boiler, which will presently show the necessity of looking well a-head when anything fresh is in the wind. The retort boiler was invented exactly as Mr. Thomson contrived it, some years before he left the neighbourhood of London; but it was not possible for him to know that, without a public inquiry, such as I make this day, with the retort boiler before my mind's eye. The first retort boiler was suggested to me by a well-known civil engineer, Mr. Hurwood, of Ipswich, in the year 1844. He was then one of the partners of Bond, Hurwood, and Co. He used to say, that hot-water boilers in general would not be perfect in principle till there was a complete circulation within the boiler itself, as no boiler could receive the heat equally over all its surface. This principle, or circulation, within the boiler was necessary for a perfect instrument, although the necessity for the principle might never occur in practice. We often recurred to the subject, till at last, in 1847 or 1848, the boiler of the conservatory at Shrubland Park gave way, and I made up my mind to put the principled boiler to the test in earnest. But I told Sir William Middleton how the question stood,—that it was quite a new thing; that Mr. Hurwood was confident in the superiority of such a boiler; and that, as far as I could judge, it must be one of the best kinds of boilers: and so it has proved. Mr. Hurwood got a mould made for the new boiler, which is probably at the foundry to this day; but Mr. Hurwood

retired from business before I left Suffolk. The "muff boiler" was soon made: that was the original name, on account of the boiler being exactly of the shape of a lady's muff. It was 4 feet long, and, I think, nearly 3 feet in diameter; and the bricklayer (Scopes) set it exactly as represented in Mr. Thomson's sketch. It turned out so well, that two years after, when another old boiler gave way at the forcing-houses, Sir William Middleton requested me to get Mr. Hurwood to make just such another boiler for the stoves; and my successor made that second boiler do the work of a third boiler in the same range. All the parties are alive to this day, and the thing can easily be seen, or proved, if that were necessary. I recollect having at the time an article in manuscript, on the subject of the new boiler, for publication; but family affliction interposed, and put the whole thing out of view, till Mr. Thomson sent me his account of the same boiler. I am satisfied that Mr. Thomson had no idea of Mr. Hurwood's boiler; and knowing that Mr. Hurwood had no intention of making it a business matter, I said nothing about it till this day, except among private friends. But suppose the case otherwise, and that both Mr. Hurwood and Mr. Thomson had claimed the invention before the Patent Office, would it not have been more pleasant to do the thing as I am doing it in this weekly article, and thus avoid all appearance of misunderstanding? In these days of fast-headedness, one is not sure three days running of what is the newest, or in progress, or is brewing, or is likely to come to pass, before the week is out.

Before Mr. Rivers finished the writing of the first edition of his "Orchard House," he heard of a newer plan, which expanded his ideas in a moment, and he exclaimed,—"What glorious orchard-houses may be built on his (Sir Joseph Paxton's) ridge-and-furrow-system of Crystal Palaces!" That suggests a third inquiry about these orchard-houses, as to what is the best span of ridge, and the best width of furrow or valley for an orchard-house? Say that one has a space of ground, from ten to twenty or thirty feet wide, between two division-walls,—such as a back garden to a suburban villa; and that it is wished to cover so many feet of this space with a ridge-and-furrow roof,—what is the most practicable and easiest roof for such spaces? If the walls are 5 feet high, they will do just as they are; if they are higher, all the better; or if lower, they must be raised, to give head room below the furrows; but that could be done for any height under seven feet, by raising the ends of the furrows on blocks; and the spaces between the top of the blocks and the top of the wall would do for end ventilation; and the whole of the glass roof, in that case, could be fixed. And, here is another fix. How is the ridge-and-furrow roof to be supported between the walls?—by props or pillars? Either way, will that not fix them for landlord's fixtures? Therefore, I want three things for this kind of house:—First, the best width or span for the different ridges; second, to know whether, if the ridges, or rather valleys, are supported on posts fixed in the ground, the house is, or is not, a landlord's fixture; and, third, can a ridge-and-furrow roof be stretched across thirty feet, from wall to wall, without any posts, studs, or columns, to keep up the roofs in successive ridges?

The next house, and the last to day, is for quite a different purpose, and landlords will have no claims on it, no matter how it is fixed. It must be seventeen feet wide, neither more nor less, and may be a hundred feet in length; but, say, to begin with, forty feet long, all on the orchard-house system of no heating apparatus. The walls for this house are up, and only four feet high; but over them, perpendicularly, we must rise twelve feet more with glass, or boards; and then one span-roof, forty feet long, in the usual way; or many spans across, in the Crystal Palace style. How many spans in the forty feet? And what should it cost, on a rough estimate, to be put up just as rough and ready as Mr. Rivers' first orchard-house,

and no painting included? What would be the difference of cost, between weather-edged boarding, of the best red deal, and glass of the commonest description? and lowest price? And how, within twenty miles of St. Paul's, or London Bridge, would be the best way to go to work on any of these structures? I think the whole put together would cover, and keep dry for use, 500 questions which I had put to me for the last five years; and the greater part of them were from readers of THE COTTAGE GARDENER. We all put down Mr. Fish as the cannier and most trustworthy writer on economic building and heating, taking economy, in the same sense as Cobbett, to mean good management, and not the lowest figure, which is, oftener than not, just paying through the nose for a thing.

Mr. Rivers says, that boiling coal tar with slackened lime will make a shining surface on woodwork, and walls of any clay, or turf, which is as imperishable as stone: it is, therefore, better than all the paints in the world for the outside work of these houses; and I have proved that rough surfaces may be made in his way as durable and hard as cast iron, by using the dust from a smithy's forge over the tar, as soon as it is brushed on. I had six wooden spouts, each 18 feet long, 4 inches wide, and 6 inches deep, for a particular purpose, and the man who supplied them (God forgive him!) assured me that they would last three lifetimes, if they were kept painted. But they soon turned so leaky, that a painter, with nothing else to do, could not make them hold their parching jaws for an hour together in hot weather; so I took the painting of them into my own hands, and gave them three good thick coats of hot tar, and as much of the forge dust everytime as the tar could suck in. From that day to this, these spouts have been as sound as a bell; and when I use tar for paint, I dust it immediately with that smithy dust, and brush off what is not fixed after the tar is quite dry.

D. BEATON.

THE CHARACTER AND CULTURE OF THE VARIOUS BEETS.

FROM the complaints so frequently heard of Beets being bad, there can be no doubt that there is a very considerable difference in the quality of Beets. This is, doubtless, a real fact, and deserves some attention on the part of cultivators.

Their value in the culinary department, or in salads, is most considerable, as the readers of THE COTTAGE GARDENER well know. I need not, therefore, labour to prove that. I may, however, offer a few remarks on what constitutes a good Beet; and the converse of this, if correct, will shew forth a bad one. The first point I consider colour; the second, and scarcely second, flavour; the third, texture; and the last, size and symmetry.

As to colour, some prefer the scarlet, some the black Beets, and some choose both. But, whatever colour, that colour should be uniform; there should be no stripes, shading, &c.,—a decided colour. The flavour should be delicate, not earthy, nor tasting of any extraneous matter. Next, we have texture. Here I need scarcely observe, that it must be tender and uniform, not harsh or sticky. Lastly, size and symmetry. Huge Beets, looking as though they were only a few degrees removed from Mangold, are vulgar in the extreme: their sections constitute most unmanageable circles. If too small, they are pithy: moderate sized, about two to three inches diameter at the crown, are most generally esteemed. Symmetry is of some importance. If they are twisted, or crooked, the sections will not be handsome.

Now, it behoves me to show what all these matters are dependent on. The following, then, are the principles we have to deal with:—*Soil, Period of Sowing, Light, Air, and Distances.*

As to *Soil*, there can be little doubt that a light one is far preferable to a stiff, or clayey soil; but almost any pliable ordinary garden soil will do very well. Here let

me mention, that all manurial matters must be avoided, unless the soil be very poor and lean, when some very old manure may be employed. As to applying dung to Beet land in the old kitchen gardens, it is absurd: it is almost sure to spoil the Beet. The soil should be most thoroughly worked: the least obstruction may turn them crooked, as in the case of Radishes, and other tap-rooted plants.

The period of Sowing is a matter of some consequence. If sown too early, the plants will run to neck; if too late, they will be too small. In the case of running to neck, the roots are sure to prove coarse. Supposing the soil to be adapted, I think the end of May an excellent time.

Light is indispensable, as well as a perfectly open situation. I have, years since, sown them on a north border, thinking they would be more tender: but they have been poor, insipid things.

Air.—A free circulation of air is equally necessary. They will not succeed huddled into any corner. For this reason careful thinning becomes necessary, of which I will presently speak.

They may be sown in drills twenty-six inches apart, the drills being two inches in depth. The seed may be either sown continuously, yet thinly, or may be dropped in patches, like Mangold, about three seeds in a patch, at nine-inch distances. By whatever plan, the plants must be thinned finally to about nine inches apart. Deep culture with the hoe, by the sides of the drills, is of importance, for by its means the side roots are kept within bounds. The object is to force them to produce abundance of fibrous roots near the main root, for these cause the Beet to assume a finer form. The hoe may, therefore, be used deeply to within three inches of the stem; but not in the earlier stages of the plant, which should be nearly half grown when the deep hoeing takes place. Whatever the kind, it will generally be found, that towards the beginning of August some very gross plants, of unusual size, will predominate over the rest. These may be removed, for they seriously injure the dwarfer Beet, which is generally the best. All those which are inclined to run to neck should at all times be pulled out. By neck, I mean a tendency to run to seed: such are sure to spoil the sample.

The finer Beets are impatient of frost, and should, therefore, be drawn, and put in winter quarters by the first week in November. But they should not be drawn by hand, for that may wound them, and cause them to bleed. They should be carefully lifted with the spade. Now, there are two or three things to be particularly noted as to their future welfare. Their foliage must be trimmed nearly close to the crown; but if trimmed whilst the foliage is fresh, they bleed, and thereby lose colour. I think it best to throw them on the soil where dug for a few days: by this practice two things are accomplished of some importance,—bleeding is stopped, and the fibres of the roots become much stagnated. The latter, however, must be totally destroyed before the Beets can be secured. If this plan be adopted, the roots should be taken up about a fortnight earlier, for fear of severe frost whilst they lay on the surface uncovered. When trimmed of their foliage, they must not be cut into the crown, but just a little stump of each leaf left—about half an inch—to save bleeding. They should then lie on the surface of the ground, and be turned occasionally, until the fibres are destroyed; and, seeking an occasion when they are dry, they may be disposed of for the winter. Some keep them in sheds, and others put them in pits. But it is well to look to the conditions requisite to their sound keeping. They should sprout as little as possible, and to this end dryness and coldness are indispensable. I keep mine in a shed, dry and cold, and I think it by far the best plan: they may, however, without much harm, be kept in a pit, as Potatoes. But they should be housed dry, and kept dry, but not by fire-heat. If the temperature is just a little above freezing, it is amply sufficient.

If any sprouts arise, they should be rubbed away,—considered as robbers.

I may here observe, that after the gardener has done his best, something remains for the cook. I do not understand the culinary art myself, but I am given to understand that they require steady boiling, and something like two hours, to do justice to them. This I do know, from pretty good authority, that cooks are sometimes to blame more than the Beet. Indeed, what is a Potato, with an excellent character, when badly cooked? And Potatoes, be they ever so good, cut but a sorry figure on one table, whilst at another the parties declare exultingly, that "tis the best Tato' in the kingdom."

R. EBBINGTON.

SOME EXOTIC SEEDS.

"I have received a large packet of seeds from friends in our Colonies. Can you tell me how to use the following, and if they are worth culture? I can command bottom heat, if wanted, and a top heat of from 45° to 50° in winter, and more in spring and summer."—J. W.

THE plants of which seeds were received will be found below, and we place them without any attempt at arrangement:

SPARAXIS (fine mixed).—It will be best to wait until February or March. Sow in sandy loam and peat, and half plunge the pots in a little bottom heat. If the seedlings come up thick, prick out into pans, or pots, about one inch apart. Water, and encourage to grow. If the leaves fade in summer, refrain from watering. If they should grow on, give them a little water; and if they should keep growing all the winter, do not starve them, but separate those that do so from those that fade. Seedlings will frequently thus prolong their growth during the first season, and will go to rest early in the spring and summer following, when they should be kept dry, either in their pots or out of them, until they begin to grow, which they will generally do in autumn, or early in winter. They should then be potted, or, if already in pots, top-dressed at least, and watered as they grow. In spring they may be expected to bloom. If planted afterwards in the flower garden, care must be taken in winter to screen them from frost. All varieties do not bloom at one time naturally, and, therefore, you must be more on the watch with a mixed collection. They belong to the Irid group.

BABIANA (mixed).—Very low-growing bulbs, requiring much the same attention as the former. A few may bloom the first year, if the seeds were sown about Christmas, but they will generally bloom freely in the second or third year. They flower early in spring and summer. Those bulbs arrived at maturity,—kept dry after the foliage withers,—potted in autumn, and watered as they grow, will bloom in a greenhouse early in spring. Those kept in a cool place in sand over the winter, planted out in sandy loam in spring, and afterwards protected from the heaviest rains, will bloom in May and June. If grown in pots, a six-inch pot will be large enough for six or eight bulbs.

TRITONIA, IXIA, ANOMATHECA (each mixed).—Treat much in the same way as Sparaxis. Different varieties of the Tritonias and Ixias bloom at different times, and, therefore, the foliage will decay at different times, which must be watched. With good treatment, all will bloom the second year; but the *Anomatheca cruenta* we have had a dense mass of bloom in July and August, from seeds sown in heat in February. All will bloom out of doors in summer, if the bulbs are protected from frosts, and from very cold, soaking rains in winter and spring. All will bloom freely in pots, in sandy peat and loam, in a cool greenhouse.

ACACIA armata, julibrissin dealbata, lophantha, and others marked superfine-leaved, &c.—The two first will suit your greenhouse. If you have not plenty of room,

it would hardly be worth your while to sow the others, unless known, or it so happens that you live in the southern counties of England. If so, after growing them for a year or two in your greenhouse, the plants could be turned against a conservatory wall, or in the sheltered places fully exposed. The foliage of *lophantha*, *julibrissin*, and *decurrens*, is very beautiful, and forms a fine feature in lofty, cool conservatories, and in warm places out of doors in Devonshire and Cornwall; but they are quite unsuited for small houses, except when in a young state, in the first or second year of their growth; as, whenever they are cramped for room, they are apt to be attacked by white scale and red spider. When young, loam with a little peat suits them well. As all the seeds are very hard when thoroughly dried, they vegetate much quicker if they are soaked in water at about 130°, for twelve hours, before sowing, and the pots placed in a moist bottom heat before the seedlings appear. The surface-soil should then be stirred, air given freely, and the plants hardened off by degrees, until they are potted separately. There is much pleasure in raising such things from seed,—they grow so fast and healthily; but such plants do not bloom so soon as those raised from cuttings.

HARDENBERGIA (of sorts).—These, with the exception of *macrophylla*, which is scarlet, are all small, purple-flowered, leguminous climbers, from Australia. They will grow well up the rafters of a greenhouse, or in a pot, trained round a trellis about a foot in diameter, and from four to five feet in height,—growing them a couple or three years from the seed before transferring them to the training pot. The pea-like seeds are small, and very hard, and, like the Acacia seed, vegetate more quickly after being soaked in warm water. In sowing,—any time after Christmas,—give the pots a nice bottom heat: use chiefly sandy peat, with a very little sandy loam, well drained. As soon as the plants are about three inches in height, pot off separately into very small pots. Then success will chiefly depend on abundant drainage; an open heath soil, with very little loam; a rather free allowance of sand; and some nodules of charcoal, to keep all open. In a young state especially, but in every state, whether young or old, stagnant water at the roots, a sour, unused soil, about the roots, and great dryness, will soon effect their ruin. Medium temperature in winter,—from 45° to 50°,—and water according to weather and wants. If in pots, the pots should be shaded from the sun in summer.

PIMELEA uniflora, and others.—Have the pots three-parts full with drainage; a little turf peat over the drainage; fine sandy peat, with the least loam, over that; leaving an inch deep from the rim. Sow the seeds, moisten gently, cover with very sandy peat their own depth of thickness, plunge in a sweet, mild bottom heat, press slightly down, and place a square of glass across the pot. Give necessary moistures, by keeping the outside of the pot damp, instead of much watering overhead, and pot off three round a small pot, as soon as fairly handleable. It will be time enough to sow in February. In growing, chiefly use light sandy peat and loam, kept open, and thoroughly drained. These will make nice plants for your greenhouse, and will generally bloom in the third season from the sowing of the seed.

HOVEA illicifolia, *linearis*, and others.—This is a fine tribe of plants for a greenhouse, most of them having blueish-lilac, pea-blossomed flowers, and forming nice little bushes of from one foot and a half to three feet in height. The seeds, like those of Acacias are very hard, and before sowing would be all the better for being soaked in warm water—about 100°—for three hours or so. There is great care required in their cultivation, for if ever the soil gets sour, from defective drainage, or very dry, so that the points of the roots are injured, decay and death are sure to be the result. It is generally best not to overpot them, as that does away with the chance of stag-

nation about the roots. Sow in sandy peat, after February. A little heat will be useful until the young plants are up, when they must be hardened off by degrees, before potting off. Then the young plants—three round the sides of a 60-pot—should be kept rather close and warm, until growth is again freely going on. When well established, place each of these plants into a single small pot. That is as much as you can expect the first season. If the three plants are not well rooted in the small pot, it would be best to keep them in that pot the first winter. The third season you may expect them to bloom. The strongest will occupy a 48-pot, unless a few that may have received extra care should want more pot room.

KENNEDYA (of sorts).—Treat as mentioned for Hardenbergias.

PASSERINAS (of kinds).—These will require similar, but not quite so much attention, as Hoveas and Pimeleas.

PASSIFLORA (of kinds).—Without trying, it is impossible to say whether they will suit your house or not, as the kinds are not given. If the seed is a little mouldy, to give it a chance of growing, clean it by shaking and drying. Then sow in dryish, sandy peat. Place in heat, but give no water, until the seed has imbibed sufficient moisture, to swell it properly, from the bed in which it is placed, or the stage on which the pot stands. This will give you a chance of growing them, while watering the soil would only insure the rapid rotting of such seed.

PODALYRIA sericea and *argentea*.—These will suit your greenhouse. The seeds should be soaked in warm water for a few hours, if they feel very hard, and be sown in a gentle heat in February, and the plants pricked and potted off as they require it. The foliage is graceful and pretty. Sandy loam and sandy heath soil, lightened with nodules of charcoal, will grow them well, if good drainage is secured.

PULTENEA (sorts).—Much the same treatment as the last. In summer, use the syringe very freely in the evening, to keep the red spider at a distance; and wherever the pots stand in summer, see that they are protected from the sun's rays, and that the roots are not dried.

HAKEA acicularis.—A singular New Holland plant, with long needle-like leaves, and the flowers close to the young shoots. Sow in February, and in the seed-pan, and afterwards avoid stagnant moisture. Heath soil and loam.

BANKSIA (of sorts).—These are pretty ornaments for greenhouses, but are chiefly admired on account of their singular and beautiful foliage. Sow in sandy peat, mixed with bruised charcoal, in February or March. If the place is comfortable as to growth, do not plunge the pot in a hot-bed; or, if that is done at all, get it out as soon as the seeds are swelling to bursting, as the seedlings are very impatient of damp. For this purpose, they should be removed from the seed-pan as soon as possible, even if they should be pricked out in two's or three's together at first. As they get larger there will be less danger; but at all times they want extra drainage, and to be grown chiefly in open, sandy heath mould, with the addition of fibry loam, as the plants get older.

PROTEA (of kinds).—Treat as for Banksia, with even more care as to open soil, and good drainage. The foliage of many is very interesting; but only a few should be grown, unless in the very largest establishment.

GREVILLEA rosaminifolia, and others.—This, like the two last, belongs to the same group. The small flowers hang gracefully at the points of the twigs. Treat it as above. It makes a pretty neat bush in the greenhouse.

MELIANTHUS major.—The foliage smells like peach-meal when fresh ground. Sow in March. Good loam, a little sandy, will suit it. It will hardly suit a small greenhouse; but, if you live south of London, a plant will be very interesting from its fine foliage against a wall. I presume, that in general winters it would live uninjured in Devonshire and Cornwall.

SPARMANNIA AFRICANA.—Another rough-looking Cape

of Good Hope plant, and apt to get too large for a small greenhouse; otherwise, its small whitish-yellow flowers, produced freely at the points of the shoots, in winter and spring, are very interesting. If the seeds are good, you will have little difficulty in raising it, as the plant at no time requires great nicety of culture. If you have many seedlings, it would be worth sending some to your friends in the south of England, and of Ireland, to try them out of doors.

You may get some nice plants from your parcel, but I do not think it likely you will get anything new. Your chief reward will be the pleasure of attending, with all the required niceties, to so many young things, and to see them flourishing under your own treatment. Friends, situated as you are yourself, would, no doubt, be glad to share with you such cares and such rewards. Do not be sanguine, that you would oblige any of your professed gardening neighbours, by sending a portion of seeds to them. In most cases, they could not give the requisite time, attention, and convenience, unless well assured they would get something new for their trouble.

R. FISH.

FLORISTS' FLOWERS.

THE PANSY.

At this time of the year, all the choice varieties of Pansies should be carefully attended to. Those intended for planting out next March should be all potted singly in four-inch pots, and placed in a cold frame through the winter. The soil to pot them in should be composed of good fresh loam and vegetable mould, in equal parts, with a free admixture of silver or river sand. The lights should be drawn off every mild day, and, in wet weather, air given behind. The grand enemy to this class of plants is *damp*, which often brings with it another pest, the *mildew*. Damp should be prevented as much as possible, by giving the necessary supplies of water on dry mornings, when the sun shines; and the lights should remain off till the surface water is evaporated. Decaying leaves should be instantly removed, as they breed mouldiness on even healthy leaves. If the mildew should appear, dust the affected leaves with sulphur. I always found that an effectual cure, if timely applied. Such as are intended to be exhibited in pots should now be nice, bushy plants, in five-inch pots; and the shoots should be pegged down, and shortened. The pots should stand on a layer of dry coal ashes, which should be renewed at least once a month; and at every renewal the plants should be looked over, and all decaying leaves removed, and the soil stirred with a sharp-pointed stick. At the same time, keep a sharp look out for slugs and snails: these vermin creep into the frames in search of food and shelter. I have frequently found them secreted in the holes at the bottom of the pots. Hence, I advise the cultivator to turn up the pots, and look for them. I need scarcely add, when found, let them be destroyed. Worms will sometimes find their way into the pots, or, possibly, have been, in a young state, in the soil at the time of potting. Their presence is easily discerned, by their casts on the surface. The best way to eradicate them, is to turn out the balls carefully, and pick out the worms. Some conceal themselves in hollows, in the centre of the ball. Where this is suspected to be the case, tap the ball gently, and the worm will creep out at the surface, and may then be easily caught and killed.

Some plants will push up with a single stem, and become unsightly objects. This may be prevented by nipping off the tops. This point must be particularly attended to with plants grown in pots for exhibition purposes.

Another point of some importance is, that the plants should be kept rather dry, than otherwise, during the dark, short days of winter. Common sense tells us, that when plants are not growing fast they do not require much stimulant, whether that stimulant be moisture or heat. Hence, Pansies should be kept moderately dry and cool during their comparatively speaking season of rest. If kept well watered and warm during that season, they may look fresh and nice, but in spring will be sadly deficient in power to produce large, richly-coloured blooms.

The ground for the Pansy spring bed should now be well dug, and laid up rough, to receive the beneficial influences of winter frost.

Having written these few cultural remarks, which I trust will be useful to the new beginner, I now proceed to give my annual list of new and select sorts, as they have been proved worthy of notice during the past summer.

NINE NEW SELECTED VARIETIES.

SELF-COLOURED.

1. *King of Sardinia* (Downie and Laird), light shaded blue self, of fine form and texture. A new colour.

2. *Mr. J. White* (Downie and Laird), a rich dark glossy self, beautifully shaded with light blue. A well formed flower of good substance.

3. *Vectis* (Smith), pure white self, with a dense dark blue blotch, well defined. Very fine and novel.

YELLOW GROUNDS.

4. *Cyclops* (Baylis), rich dark-violet maroon belting. A large, finely-formed flower, of good substance.

5. *Maude* (Campbell), rich yellow, with crimson maroon belt, and fine eye. Good form, and medium size.

6. *Tam Stewart* (Walker), rich yellow; medium dark belt, and good form. Very fine.

WHITE GROUNDS.

7. *Fair Maid* (Whittingham), light ground; belt bright purple; eye good. Large and well formed.

8. *Lady Jane* (Downie and Laird), pure white, heavily belted with dark purplish maroon; large dense blotch. A fine variety.

9. *Triumphant* (Fairbaru), broad purple margin. Extra fine form.

TWELVE SELECTED OLDER VARIETIES.

SELFS.

Bessie (Hooper), deep yellow. Fine form.

Jeanie's Rival (Sheauer), rich black purple.

Sir Arthur (Stenhouse), rich dark, shaded with blue.

Optimum (Robinson and Co.), intensely dark. Very fine.

YELLOW GROUNDS.

Dr. Livingstone; gold, with maroon margin. Fine.

Eclipse (Downie and Laird), broad belt of crimson maroon. Dense blotch, and extra fine form.

Model (Dickson and Co.), rich maroon belting. Very good.

William (Reid), rich purple maroon belting. Extra fine.

WHITE GROUNDS.

Ebé Lightbody (Campbell), dark purple margin; solid blotch. Fine form.

Margery (Blair), rich dark purple belt. Good eye, and fine form and substance.

Lady Matheson (Downie and Laird), broad rich purple belting. A good variety.

Princess Royal (White and Sinclair), light creamy ground, with heavy purple belting; large solid blotch, and bold eye. A well-defined variety.—T. APPLEBY.

EARLY PEAS.

FEW novelties are more welcomed at table than a nice dish of Peas, more especially the first dish of the season. To have them as early as possible has been for many years a source of anxious care on the part of the cultivator, and some little rivalry generally exists between neighbouring growers, as to who shall have the honour of gathering the first dish. This laudable emulation has not passed unnoticed by seedsmen and seed-growers, who, falling into the views of the cultivators, have furnished many so-called varieties of early Peas. Some of these are doubtless better than the old ones, while others are nothing more than repetitions of the same kinds we have had so long, only issued with a high-sounding name. Nevertheless, if the bulk of the new kinds be only old ones in a new form, those that are really good compensate for the deterioration of the old ones; for I am of opinion that most varieties have a tendency to return to their original condition. Consequently, it becomes the careful cultivator to guard against this by the introduction of newer kinds; and whether these be better than the best kinds grown twenty years ago is not so much a matter of importance, for it is pretty evident that the kinds grown at that distant period would have degenerated very much ere this. Let us, therefore, not despise really new kinds, but old ones under new names, with no other distinctive feature than their name and costliness. It is, there-

fore, not an easy matter to give advice on the head of new varieties, when we are told that it sometimes happens that half-a-dozen kinds can be had from one bag.

Be this as it may, the novelty-seeking public have brought much of it on themselves, by continually seeking and patronising those who sell their seeds under the cost of production, to the disparagement of those who would deal fair, and are reluctantly obliged to do as others do. However, leaving others to find a remedy for the seed trade and its concomitant evils, a few words on the cultivation of early Peas will now be acceptable,—the usual mode of attaining them being by sowing their seed at this season. Other modes are also adopted by special growers; but those grown for the million are of necessity subjected to that hardy treatment which affords a good return for a small amount of labour and expense.

Supposing an ordinary walled-in garden to have a south-lying border at liberty, to have been manured for some of the summer crops, and to be in pretty good condition, it need not have any accession that way this time, as too much grossness is against the Peaplants standing hard weather. Generally speaking, Peas endure hard weather best on a dry, calcareous soil: even chalk is not averse to winter work, as in dry, chalky districts many fields are annually sown with Peas, which stand the winter, are gathered when ready, and some other crop sown on the ground. But, as all gardens have not a dry, chalky corner, recourse must be had to such places as present themselves; and, in a general way, a south-lying border will be found a suitable situation; only the warmer it is, and the more it is sheltered from cold winds, the better. As almost all gardens have a favoured spot of this kind, the claims of early Peas entitle them to its occupation before many things of less importance.

The ground being fixed on, the sowing of the crop is easily effected. After the ground has been dug, let them be sown in drills about four feet apart. As it is not expected that any of the tall-growing ones will be sown at this time, if the ground be very stiff, and slugs and other enemies abound, a liberal coating of coal ashes over the seed will assist in protecting them from their attacks. If, however, the ground be dry, this need not be applied. But care must be taken not to tread the ground very much in wet weather, as it sodden and disorders it for the whole season; but, if it be dry, a good treading at top is beneficial rather than otherwise, the bottom being open and loose for some depth.

The period for sowing is about the middle of November. But so much depends on the weather that follows; for if it be mild up to the end of January, or later, the young crop is very likely to be six or eight inches high, which is much too high to endure the cold weather that often follows; but if severe weather should set in before Christmas, they will be none too early. The best plan is, to sow a portion in the middle of November, and a like quantity a month afterwards: the latter is very often the best, and sometimes the earliest.

As I have before observed, it is difficult to give advice on kinds; but to the amateur I may say, that *Warner's Emperor* and *Sangster's No. 1* are each good early Peas. No doubt, there are others equally good; but it is annoying to have a tall, lanky, late one come up, where an early, good cropper was expected; yet such things happen in the Pea trade.—J. ROBSON.

NOTES ON NEW OR RARE PLANTS.

PRIMULA STUARTI. *Wall.* Nat. ord., *Primulaceæ*. Native of the Himalaya.—An alpine, herbaceous plant. Leaves radical, numerous, long, broadly lanceolate, acute, gradually gliding at the base into a short footstalk, which is much grooved on the upper side; margin acutely serrated, pale green, and shining above; covered below with yellow farina. Scape about fifteen inches high, terminating in an umbellate inflorescence. Involucrum composed of numerous lanceolate leaflets. Calyx monosepalous, tubulate, and slightly campanulate; limb divided into five acutely lanceolate segments, farinose. Corolla monopetalous; tube long, contracted near the mouth; limb salver-shaped, divided into five rounded segments,—yellow, tinged with orange towards the centre. Stamens five, attached to the tube of the corolla. Style long, surmounted by a capitate stigma.

This is one of the most striking species of the genus *Primula*, and by no means a common one; indeed, it is a pity it should be so scarce. Peat and loam in nearly equal parts, with a good portion of sharp, gritty sand, form the most suitable compost for

it. Plentiful and well-placed drainage is highly essential, as the plant is very impatient of superfluous moisture at the roots, especially in autumn and winter; and at these seasons it should be sparingly watered, as well as carefully protected from heavy autumnal rains. It requires the protection of a cold frame in winter. Blooms in June and July.

CUPHEA SILENOIDES. *Nees.* Nat. ord., *Lythraceæ*. Native of Mexico.—Hardy annual, with erect branching habit. Branches round, covered with spreading, glandular hairs. Leaves opposite, obtusely lanceolate, entire. Petioles very short. Pedicels solitary, springing from between the petioles, each bearing a single flower, based by a couple of deflexed bracts. Calyx tubular, elongated, furrowed, viscid; with a limb of five acute segments. Petals six, unguiculate, spreading, rotund: four (the lower), small, deep purple; the two upper, much larger, also deep purple, with the margin paler. Stamens attached to the side of the calyx tube. Style subulate.

A beautiful annual, requiring slight heat, if raised in March; but it also succeeds well sown in the open ground in April or May. It blooms most profusely till frost destroys it in early winter; and it ripens seeds freely in this (London) locality.

CUPHEA PURPUREA. Native of Mexico. Nearly allied to, but very distinct from, *C. silenoides*.—Annual, about a foot and a half high. Branches strong, covered with glutinous hairs. Leaves opposite, shortly petiolate, ovato-cordate, acute, entire. Pedicels short, produced between the petioles. Calyx tubular, elongated, furrowed; limb divided into six segments: five short, acute; the sixth larger, and very obtuse. Corolla of six petals: the four lower, small, obovate; the two upper, larger, and more rounded. All pale purple. Stamens arranged in two rows, attached to the calyx tube. Style subulate, with several spreading hairs near the apex.

A very beautiful, free, and long-flowering species, requiring the same treatment as *C. silenoides*, and, like it, freely ripens its seeds here.

LOASA PENTLANDII. *Paxt.* Nat. ord., *Loasaceæ*. Native of Peru.—A dwarf twiner, about four feet high. Branches round, thickly set with short, stiff, stinging hairs. Leaves opposite, elongated, pinnatifid, clothed with stinging hairs. Calyx tubular, persistent; divided into five lanceolate, pinnatifid segments. Petals ten, unguiculate, five large, spreading, concave; alternating with the calyx lobes, five small and scale-like, inserted opposite to the calyx lobes. Dark orange. Stamens numerous. Anthers erect. Capsule turbinate, oblong. Style short, with a trifid apex.

This is a tender, or half-hardy, annual, particularly well worth cultivating. It requires a compost of about equal parts light loam and leaf mould, with about a third-part of sand. It should be sown about the middle of March, in gentle bottom heat. When the seedlings are fit to handle, they should be pricked off, moderately thick, into six-inch pots; and, after they are well established, the weaker plants may be thinned out, and the stronger encouraged as much as possible, under glass, till planting-out time, when some, after being duly hardened off, should be transferred to the open ground, and the others potted on for the greenhouse.—S. G. W.

AMPTON PARK.

I HAVE been much gratified of late by seeing accounts in THE COTTAGE GARDENER of fine specimens of the beautiful *Gynereum argenteum*, the merits of which, as a highly ornamental plant, appear to be deservedly recognised in all parts of the country.

I have seen several fine plants of this gigantic grass, but by far the best I have seen is now flowering beautifully at Ampton, the residence of H. Browning, Esq., about five miles from Bury St. Edmund's. It is the female plant, and is growing in common garden soil. It carries no less than fifty-four fine spikes of flowers, the central ones attaining an altitude of twelve feet. The plant itself is a perfect sphere, twelve feet in diameter, and, as may be supposed, is altogether a most singular-looking and beautiful object.

This place also boasts of some uncommonly fine old Cedars of Lebanon, &c. In fact, few noblemen or gentlemen's seats are more delightfully situated than Ampton Park, and the grounds present many rich and beautiful scenes, perhaps not to be surpassed by any seat in this county.

The grounds are naturally of an undulating and diversified

character, and excellent taste and skill have been displayed in the laying out of the same, and in the formation of the lake, or rather river, &c.

In addition to many fine species of the more early introduced Conifers, there is also a collection of ornamental deciduous trees and shrubs, many of them very rare and not often to be met with.

And last, although not destined long to be the least, I noticed a very fine young plant of the *Wellingtonia gigantea*, which certainly seemed to like its situation; and it also appeared to claim a considerable share of the fostering care of the gardener, Mr. Hutchison, a very skilful and most enthusiastic cultivator, who assured me that it had grown fully three feet this present season. It has been planted two years, and is now seven feet high. It has had no protection whatever, and it certainly bids fair to be, in a few years, one of the finest specimens of the *Wellingtonia* in this country.—H. F.

FRUIT AND FRUIT TREES OF GREAT BRITAIN.

(Continued from page 55.)

and maintains a vigorous, though not a rampant growth. It is an excellent bearer, and succeeds well on the Quince stock, either as a pyramid or a dwarf bush.

This is supposed to be a seedling of Dr. Van Mons, from whom Mr. Rivers, of Sawbridgeworth, received it, some years ago, under the name of *Beurré Van Mons*. This name ought in justice, therefore, to take the precedence of all others; but, from the great confusion in which Van Mons is well known to have had his collection, the same designation has been applied to several other varieties. To preserve the identity of this variety, I have adopted the name placed at the head of this article. *Adèle de St. Denis* is a name applied to it in France, probably by some grower who received grafts from Van Mons without any name at all, and distinguished only by a number,—a practice in which he was very wont to indulge, not unfrequently sending two or three different Pears under the same number to different persons.

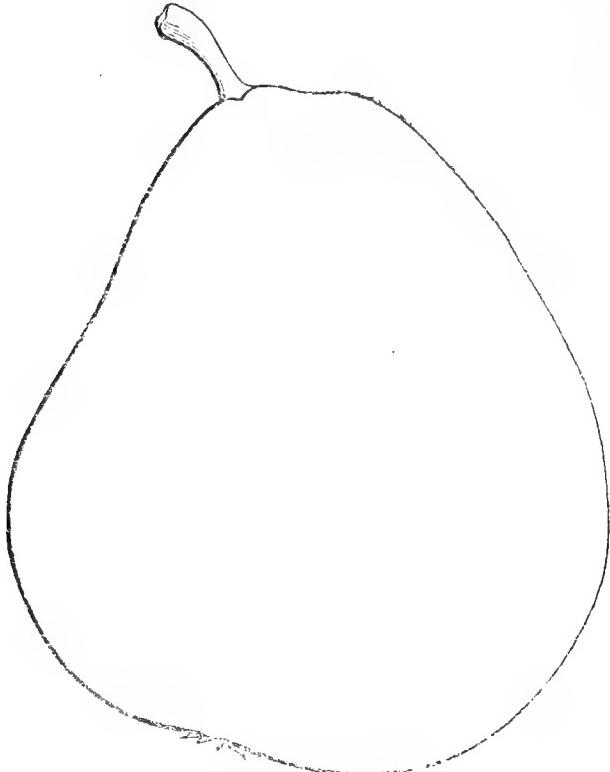
The figure and description are taken from fruit grown in the northern parts of Sussex, on the Hastings sand formation, and from a tree in my possession.—H.

NOTES BY A SMALL GARDENER.

If through the medium of THE COTTAGE GARDENER its subscribers are not made cottage gardeners, aye,—palace gardeners,—it is not the fault of that valuable journal. In it I find precept upon precept. In last week's number there is a great deal of instruction. Now, commendation for good deeds must at all times be acceptable to those by whom accomplished, if that praise shall be sincerely given and rightly received. To our friend Mr. Beaton in particular, and to all others who have contributed to THE COTTAGE GARDENER, I beg to return my sincere thanks. I may just say that, if Ministers of the Gospel were as faithful to their trust as our respected friend Mr. Beaton is to his, and also if men would only listen and attend, we should have better doings than we have. In his writings in THE COTTAGE GARDENER, I find a great deal of that commodity called common sense, which, by the way, is the most uncommon now-a-days. He fearlessly cries down abuses and praises that which is good. I would there were more such men in the world. His words on the pulling-up of plants, instead of lifting them, are good, and stand to reason and common sense. Plants are like human beings; but people forget that. Again, if we profess to grow flowers, let us grow them, and not half do it. Care and attention are required, mixed with common sense. Let us again sing the old song on pot culture. First, then, plenty of crocks, upon the top of which a few pieces of rotten sod; then we need not fear good drainage. Let the pots be clean, which is very important: a dirty, mucky house is not congenial to their well-being. There is no such thing as watering plants by rule: but how often do we find plants grown in pots saturated with water. Yet there is no rule without an exception, some plants requiring more water than others. But, as a rule, plants do not like being made drunk with water. It is better, however to study how they grow naturally.

A word or two about cellaring plants. I have had so many plants this year for a small garden and small greenhouse, that I have been obliged to cellar them. I think the cellar is not quite so dry as Mr. Beaton's. Well, the latter end of September was the time when a host of my plants were consigned to their resting-place for the winter. Here they are, then, in the cellar, closely packed together in pots, principally consisting of Geraniums, Fuchsias, Achimenes (laid down on their sides), Cobeas, Wistarias, Deutzias, Petunias, &c. The cellar is light, and very airy, measuring about eighteen feet by fifteen feet. The Geraniums have a longing desire to grow again. I will watch them pretty keenly, and, if I am spared until spring, I will give you an account how these little things have spent their winter in their low habitation.

There is a lovely little flower, which some of our friends would like to grow. By some it is considered very tender; but I have not found it so tender as some describe it. The plant is *Globe Amaranthus*. I threw the last away this week. I sowed the seed in March, in a pot, over the flue in the greenhouse; and, when large enough to handle, I shifted each into a pot, and, after a short time, placed them on the shelf with the other plants. My greenhouse is a cool one. Of course, in cold, damp weather I use a fire. I grew them in small pots, as dwarfs.—SAMUEL TATTERSALL, Smedley, Manchester.



No. XII.—BARONNE DE MELLO PEAR.

SYNONYMES.—*Beurré Van Mons*; *Adèle de St. Denis*.

Fruit inodorous; of a curved pyramidal shape, rounding towards the eye, and tapering on one side with a dipping curve towards the stalk; sometimes the surface is bossed or undulating, but generally it is even.

Skin almost entirely covered with dark brown russet, which is thin and smooth, so that it has no roughness to the feel; on the shaded side, the ground colour, which is generally more or less visible, is greenish-yellow, mottled over with russet.

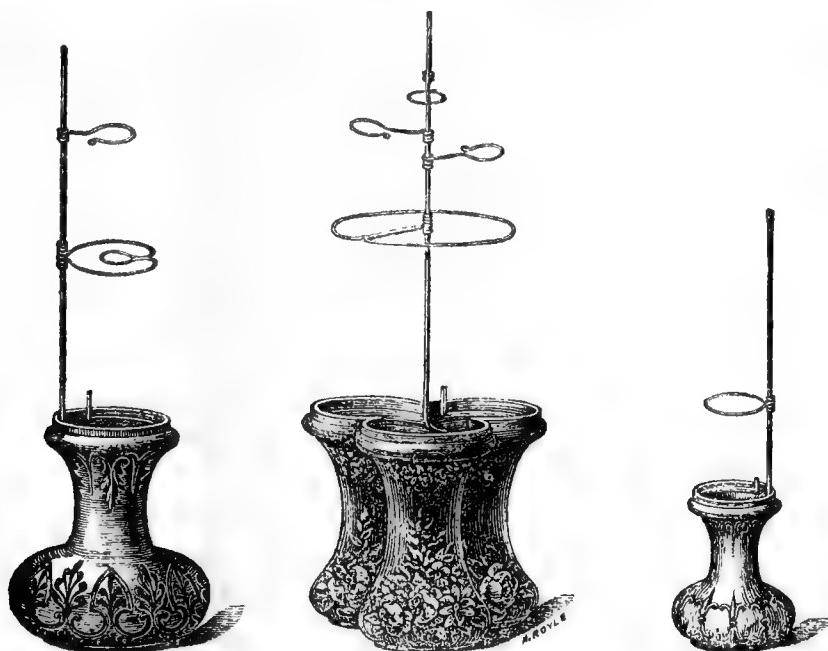
Eye small and open, with incurved, tooth-like segments, and placed in a very slight depression, sometimes almost level with the surface.

Stalk half an inch long, slender, woody, and of a brown colour; inserted on the surface of the fruit.

Flesh greenish-yellow, fine-grained, melting, and buttery. Juice very abundant, rich, sugary, brisk, and vinous, with a fine aroma. This is when it is in perfection; but in some seasons, and in poor soils in exposed and cold situations, I have found it coarse-grained and gritty, not at all sugary, and with a watery juice.

This is a very excellent autumn Pear, and one of the very first quality. It ripens in the end of October, and sometimes keeps on well into November; consequently, it forms a succession to *Beurré Superfin*, which was described at pages 54-5. Though an early autumn Pear, it ripens well without decaying at the core, a property which too many do not possess. The tree is very hardy,

TYE'S HYACINTH GLASSES.



It would be difficult to point out a more formal, inelegant form than that of the common Hyacinth glass. It compels the flower to be grown singly, and precludes by its shape all attempts at grouping the Hyacinths; and when we see them placed about on mantelpieces and in windows, we have them ludicrously associated with the miniature Poplar trees in the Dutch toy-boxes of childhood.

Now is this formality of form the only defect of those glasses. Though made of coloured glass, this admits rays of light to the roots. Now, these vegetate most healthily in darkness, and though clear glass is injurious, more or less, to their vegetating, yet some coloured glass, admitting only one set of rays of the spectrum, is often still more markedly injurious.

Mr. Tye's Bulb-glasses obviate all these objections; and the brass supports adapted to them are the simplest and most effective we have ever employed.

The engraving renders a lengthy description needless. They are elegant in form, opaque, most tastefully ornamented, and are very cheap. The "*Tria-juncta-in-uno*" enables three to be grown in close contact; and two of these treble vases, placed back to back, so that six divers-coloured Hyacinths can be arranged together, forms the most beautiful group of this flower we have ever looked upon.

Mr. Tye has smaller glasses of a similar form, and furnished with supports, for Crocuses, Tulips, Narcissi, &c.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 72.)

[D. signifies that varieties so marked are to be used only for the dessert; K., for kitchen purposes; and C., for cider-making. Those marked K.D. are applicable either to kitchen or dessert use.]

APPLES.

NONESUCH, K.D.—Medium sized, round, and flattened. Skin greenish yellow, striped with dull red next the sun. Stalk short and slender. Eye small, set in a wide, shallow basin. Flesh white, tender, and pleasantly sub-acid. September and October.

NONPAREIL, D. (*Hunt's Nonpareil, Lovedon's Pippin*).—Rather below medium size, roundish, slightly ovate. Skin greenish yellow, with pale russet, and brownish red next the sun. Stalk long and slender. Eye small, set in a narrow, round basin. Flesh greenish white, firm, crisp, and richly flavoured. A first-rate dessert apple. January to May.

NORFOLK BEARER, K.—About medium size, roundish, angular round the eye. Skin green, with a yellowish tinge on the shaded side, but covered with dark crimson next the sun. Eye small and slightly open. Stalk half an inch long, slender. Flesh greenish, tender, crisp, with a brisk and agreeable flavour. Tree a great bearer. December and January.

NORFOLK BEEFING, K. (*Catshead Beefing, Read's Baker*).—Large, round, flat at the ends. Skin green, and deep red next the sun. Stalk short, fleshy, and deeply inserted. Eye large, set in a deep and irregularly plaited basin. Flesh greenish white, firm, and sub-acid. "Excellent for drying." November to July.

Norfolk Colman. See *Winter Colman*.

Norfolk Pippin. See *Adams' Pearmain*.

Norfolk Storing. See *Winter Colman*.

Normanton Wonder. See *Dumelow's Seedling*.

NORTHERN GREENING, K. (*Walmer Court*).—Above the medium size, roundish ovate. Skin dull green, brownish red next the sun. Stalk short and thick. Eye small. Flesh greenish white, sub-acid. A first-rate kitchen apple. November to April.

NORTHERN SPY, D.—Large, conical, and angular. Skin yellow on the shaded side, but streaked with crimson on the side next the sun. Stalk three quarters of an inch long, slender. Flesh yellowish white, juicy, rich, and aromatic. An American apple, which ripens well in this country. December to May.

Northwick Pippin. See *Blenheim Orange*.

Nutmeg Pippin. See *Cockle Pippin*.

Oldaker's New. See *Alfriston*.

Old Maid's. See *Knobbed Russet*.

Orange Pippin. See *Isle of Wight Pippin*.

ORD'S APPLE, D.—Medium sized, conical, with prominent and unequal ribs, forming ridges round the eye. Skin smooth and shiny, light green, and with pale brownish red next the sun. Eye small and closed. Stalk short. Flesh tender, crisp, and brittle; very juicy, vinous, and perfumed. An excellent dessert apple. January to May.

OSLIN, D. (*Arbroath Pippin, Mother Apple*).—Medium

sized, roundish, flattened. Skin green, changing to lemon yellow, dotted with greyish-green specks. Stalk thick and short. Eye in a shallow, plaited basin. Flesh yellowish, firm, crisp, and highly aromatic. One of the best summer apples. August.

Owen's Golden Beauty. See *Joanneting*.

Ox Apple. See *Gloria Mundi*.

Oxford Peach. See *Scarlet Pearmain*.

Pearmain. See *Winter Pearmain*.

PEARSON'S PLATE, D.—Small, roundish, and flattened. Skin greenish yellow, red next the sun. Eye open and shallow. Stalk half an inch long. Flesh greenish yellow, firm, crisp, juicy, and sugary, with a fine brisk flavour. A first-rate dessert fruit. December to March.

PENNINGTON'S SEEDLING, D.—Medium sized, flat, and slightly angular. Skin covered with yellow russet, pale brown next the sun. Stalk long, thick, and set in a wide, irregular cavity. Eye with long segments, shallow. Flesh yellowish, firm, crisp, and highly flavoured. November to March.

Phillipps' Reinette. See *Court of Wick*.

PILES' RUSSET, D.—Rather large, irregular. Skin pale green, and covered with thick russet. Stalk short. Eye closed. Flesh greenish yellow, firm, sugary, and aromatic. March and April.

PINEAPPLE RUSSET, D.—Above medium size, roundish ovate, and angular. Skin greenish yellow, dotted with white spots on one side, and covered with thick yellowish russet on the other. Stalk an inch long. Eye small, set in a shallow, plaited basin. Flesh pale yellow, crisp, very juicy, tender, with a highly aromatic perfume. One of the best dessert apples. September and October.

PINNER SEEDLING, D. (*Carel's Seedling*).—Medium sized, roundish ovate, and slightly angular. Skin greenish yellow, nearly covered with russet, and with a reddish-brown cheek next the sun. Eye small and closed. Stalk short. Flesh yellowish, crisp, juicy, sugary, and brisk. December to April.

PITMASTON NONPAREIL, D. (*Russet Coat Nonpareil*).—Medium sized, flat, compressed at the ends. Skin dull green, covered with a thin yellow russet, with a faint red next the sun. Stalk short. Eye open, large, and placed in a broad, shallow, and irregularly plaited cavity. Flesh greenish yellow, firm, and richly aromatic. November and December.

POMME GRISE, D.—Small, roundish, or ovate. Skin russety, with a brownish-red tinge next the sun. Eye small and open. Stalk short. Flesh yellowish, tender, crisp, juicy, sugary, and aromatic. October to February.

Portugal. See *Reinette de Canada*.

Potter's Large. See *Kentish Fill Basket*.

POWELL'S RUSSET, D.—Small, roundish, flat at the ends. Skin yellowish green, and russety. Stalk short and slender. Eye small. Flesh pale yellow, rich, and aromatic. November to January.

Princess Noble. See *Golden Reinette*.

Princess Noble Zoete. See *Court-pendu Plat*.

Queen's Apple. See *Borsdörffer*.

RAVELSTON PIPPIN, D.—Medium sized, roundish, irregularly shaped, and ribbed. Skin greenish yellow, covered with red streaks. Eye closed. Stalk short and thick. Flesh yellow, firm, sweet, and pleasantly flavoured. August.

Read's Baker. See *Norfolk Beeling*.

RED ASTRACHAN, D. (*Anglesea Pippin*).—Medium sized, conical, and angular. Skin entirely covered with bright red on the side next the sun; deep yellow in the shade, and covered with a bloom. Stalk short, deeply inserted. Eye closed. Flesh white, and richly flavoured. Very prolific, and an excellent dessert apple. August and September.

Red Quarrenden. See *Devonshire Quarrenden*.

(To be continued.)

QUERIES AND ANSWERS.

GROWING HYACINTHIS IN BEDS.

"Will you tell me whether the following plan will answer for Hyacinths? I have planted some in pots, which are now covered with tan, in a cool place, and are rooting nicely. In the spring I wish to have them in the beds, afterwards to be occupied by the bedding plants. I prefer them in pots, because they can be taken away without presenting the untidy appearance of fading leaves, &c. Should I put them in their pots in the beds now, where I mean them to bloom, or keep them in-doors during the winter? I am afraid the latter plan will make them bloom sooner than I want them, in this cold climate. Will the frost hurt them if plunged in the beds now?"—CAMBRIA.

[We were arranging our ideas of bulbs in beds, and your plan of potting them, and placing them in tan, as for forcing, was to be our text. The subject was to be divided into three heads. And, first, the best way to have a bloom of Hyacinths out of doors, in April, is to pot the bulbs in large 48-pots,—one bulb in a pot,—not later than the 20th of September; to plunge them, out of doors, just as you have done, with five or six inches of tan, or finely-sifted ashes, over them; and to leave them there till all the leaves and autumn refuse were swept right out of the garden, and the beds cleaned, cleared, and dug very deep. Then choose a dry, sunny day before Christmas, and take up the bulbs and plant them, pots and all,—the tops of the pots to be full three inches below the surface of the bed; after which put a very slight mulching of sifted something soft, to keep the surface from caking after rain, snow, and frost; and sprinkle a little soot over the mulching, to deceive mice, who are fond of nibbling bulbs. But soot puts them off the scent, as your plan put us off the best article we ever wrote, all but the second and third heads. But the first head was the best, and the rest are not good without it. You must not indulge your Hyacinths under cover,—we mean in-doors, or in any kind of frame or pit. If they are out in the open air, and in the plunging material, they will take no hurt or harm, even if you are forced to leave them out of the beds till February.]

CULTURE OF MEDINILLA MAGNIFICA.

"Can you give me the name of a good work that treats of the culture and propagation of stove plants? Also, through the medium of your columns, some information on the *Medinilla magnifica*, which I should wish to flower in a manner worthy of its name? I do not know whether I may expect the following favour, but if it is expecting too much, it can but be refused:—I have a very nice Rose garden, but have never yet seen it looking as nice as I should wish it. If I send a plan of it to your office, will you give me directions?"—C. M. M.

[There is no separate work on stove plants that we are aware of. Can you grow and bloom Hydrangeas in pots? If not, you must first learn to do it, and then apply the very selfsame rules to *Medinilla magnifica*, in a stove temperature. There is not a pin's difference between the propagation, the cultivation, and the flowering of the two plants, except the heat, and the extra moisture which the heated air must be supplied with, to make it congenial to free growth. Have you not read every thing that is known, or worth knowing, about the whole management of *Medinilla* in THE COTTAGE GARDENER, even to blooming it in small cutting-pots, just like blooming autumn-struck cuttings of *Hydrangea*? That was done by the Messrs. Henderson, of the Wellington Road Nursery, last spring, as was stated in our report of their establishment? Have you, also, not read about their Cyclamens, and forgot all about them? If we had a stove, we should propagate three or four dozen cuttings of *Medinilla*, in August and September, from two old plants, which we would plant, purposely, in a rich bed, in a cold pit, which we would keep hot by closeness. After the 10th or 15th of July, we would take off the lights of the *Medinilla* pit at night, and put them on in the daytime. We would select our cuttings as we would those of *Hydrangeas*, strike them in 60-pots, and flower them from April to July in the next sized pot, just as was done at the Wellington Road Nursery; but we have no stove, and we mean to flower one dozen of their Cyclamens for every pretended *Medinilla*. We buy them by the hundred, pay down on the nail, and insist on getting them at trade price. We prefer the race of *Coum*, alias *vernunum* of botany. Of this are the lovely gems of *Atkinsii*, all as hardy as *Coum*, and all the kinds of *Persicum*. The two are

distinct races, and with the Medinilla, in small pots, nothing can look more nice or gorgeous; but old plants of Medinillas, in pots, we cannot abide. Get a stool of Medinilla, stump it every year for cuttings, mind the Hydrangea, and have no more ideas of books on stove plants. Why, such books would not pay for their own wrappers.

Plant your Rose garden in your own best style; send us a copy of the plan, with references to the names of the Roses; and we shall tell what is right or wrong, and no unrash mortal can do more.]

CLOTHING A WALL.

"I am much obliged to you for your answer to my inquiry about the brick wall adjoining my flower garden. My difficulty is rather with the wall itself, than with the border. The red bricks offend me, and what I want to know is, how best to hide them? Roses are first-rate in the summer; but winter comes, and then the Roses do little, either to ornament or conceal the wall. I like your notion of Ivy faced with the scarlet *Emperor Geranium*. But I am not sure that I should not prefer 'choice half-hardy plants.' What plants would you recommend,—keeping winter in mind,—to prevent the wall being bare? It has occurred to me, that much might be done, by placing plants in pots, boxes, or vases, in front of the wall, which, of course, could be changed when desirable."—EMMA.

[There is nothing more easily hidden than the face of a brick wall seven feet high. You may do it in one week, by nailing Ivy seven feet high, growing in pots; but the border is the great consideration, and the greatest expense. Ivy plants in pots, and seven feet high, to cover 500 yards of a seven-feet wall, would not cost half so much as one year's disagreeableness of seeing a brick wall in one's way. A row of common Laurels, seven feet high, would be a greater expense than the Ivy; but if the Laurels were planted three or four feet from the wall, they would hide it more than the Ivy. The Ivy does not hide the idea of a wall, only the face of it; but the face of your wall, and many other walls, may be a good deal disguised, by raising mounds of earth against them, at intervals more or less distant, according to taste,—say, a space of ten or twelve feet *along the wall*, and four or five feet *out from the wall*,—to be filled with any common soil, and brought up to a point near the top of the wall,—half a cone, in fact. These mounds should be planted with small plants of Ivy, as the heaping-up proceeds. Then, with the spaces of wall between these projections,—to be also covered with Ivy, and a good border in front,—you might make that part the boundary to an experimental garden, as Mr. Beaton tells us he has done at the Experimental. Placing plants in pots, boxes, or vases, in front of a seven-feet wall, to hide it, is an idea which would never occur to a man of practice; but women of practice never leave a stone unturned for an "object," and have succeeded in this. A wall covered with Ivy, with Roses in the tubs before the Ivy, and trained up among it, was recommended, long since, in these pages.]

HARDINESS OF LIBOCEDRUS CHILENSIS.

"While making a list of *hardy Conifers* to have sent me to look at, from an eminent York nurseryman, I chanced to meet with the following passage in THE COTTAGE GARDENER, where Mr. Beaton says:—'Either *Libocedrus tetragona* or *L. Chilensis*, or both, are as hardy as the common Larch, and grow to a much larger timber.' Upon the strength of this, I added them to my list. In reference to them, I received the following reply:—'We can send you *Libocedrus Chilensis*, if you desire it, but it is *not* hardy. We do not grow *L. tetragona*.' When doctors differ, who shall decide? Not—FRANK GRANT."

[*Libocedrus Chilensis* is just as hardy as Mr. Beaton said it was. It is quite as hardy as the common Laurel round London; but every one of the common Laurels were frosted and twice killed to the ground, in and near London, and in the Experimental Garden, during this century. Whether or not the *Libocedrus* would have stood that degree of cold, we cannot say. But the people of York may be quite right in saying it is not hardy for your situation. There is not a plant in the world which is not quite hardy somewhere, and quite the contrary somewhere else; therefore, it is of no general utility to discuss the hardiness of a plant in a work like THE COTTAGE GARDENER, which is read in all parts of the world, when the place

for the hardy plant, or not hardy, may be like your place, for aught that we know, on the top of Ben Feden. *Libocedrus Chilensis* may not be hardy in your latitude, and you had better be guided by the statement of the York nurserymen, unless you choose to try for yourself.]

PROPAGATING THE PASSION-FLOWER.

"Is the fruit of the blue Passion-Flower of any use, either for fruit or seed? It is the shape of an egg, and about one inch and a half long, and quite green. How am I to proceed to make it useful? It is trained to a south wall."—JAMES.

[The fruit is of no use whatever, and pray do not inflict the punishment of seedling Passion-Flowers on your fellow subjects, as they may get into the trade, and be innocently sold for flowering plants, while the chances are, that one of your seedlings would take years and years to bloom freely. A kind of Passion-Flower, called *Tacsonia*, was introduced thirty years ago. The late Mrs. Marriott supplied seeds of it so freely from her conservatory, that nurserymen did not think of increasing it otherwise; and when the people all over the country sent up to London for this fine new climber, they had batches of the good lady's seedlings sent to them. Of course, seedlings do not bloom so soon as grafts and cuttings do. In England, some plants take twenty years to bloom from a seed, and some Passion-Flowers would not bloom even in twenty years from seed, and some might bloom the third or fourth year. It is all a chance.]

"How should I proceed to get a stock of Passion-Flower plants from a blue one which I have, several years old, which has thrown up suckers?"—A DARLINGTON READER.

[Pray never increase climbers or fruit-plants from suckers. The like never produced the like more to the letter, than do these plants from suckers. Destroy all the suckers, and never again utter a word on the subject. It is bad enough to have teased one generation with seedling Passion-Flowers, without assailing the next generations with sucker-producing plants.]

FORCING FOR SPRING CUTTINGS.

"Will you inform a subscriber the best way of forcing old plants for cuttings in the spring? Also, whether plants break better by being put in when very small plants? Also, have you any objection to tell the principle—or rather the way—the Waltonian Case, advertised in your columns, is heated, as the writer wishes, if practicable, to make one himself?"—A TWELVEMONTH'S SUBSCRIBER.

[The best way to force plants in the spring, to make young growths for cuttings, depends upon the kind of plants. For instance, all the woody stove plants do best when three years old, and when plunged in a hotbed of dung and leaves at the beginning of March, to get April cuttings from. All bedding *Geraniums*, of the *Horseshoe* race, are best to be just one year old, and to be placed in a dry stove at the end of February. While *Verbenas* do best from plants which were struck last August, in a moderately moist stove, and so forth. Every class of plants has a special best time for itself.

The principle of the Waltonian Case is the same as that by which tanks of water are heated, by passing hot-water pipes through them. The water is the body for retaining the heat in both cases. The chimney from the lamp, or gas-jet, in the Waltonian Case must pass through a tin or zinc case full of water, as the hot-water pipes run through a tank. Heat a tube, or pipe, with either smoke, steam, gas, water, oil, or tan, and get the tube or pipe through a vessel of water, and the principle is the same. The water is heated by the heat of the tube, and parts with it slowly, and more uniformly, than from tubes. If you bend a one-inch iron tube, and place the bent part against the back of a cottage grate, or the back of the fire, and run the two legs into a cupboard on either side of the fire, and there let both ends discharge into a can of water, on two levels,—one leg near the top, and the other leg near the bottom of the can,—you can have a can of boiling water in your cupboard. Or have a longer pipe, so as to get both legs out through the wall to the garden, or sun side of the house; then place the two legs in a long, flat, shallow vessel, like a beer-cooler, but on two levels, top and bottom, as in the can, and the beer-cooler will soon be as hot, or rather the water

in the beer cooler will soon be as hot, as was the beer or wort when they put the hops in it. From a lid to let up this heat, it would be easy to have bottom heat on a different principle from the Waltonian,—the principle of heating the water by its own circulation; while Mr. Walton heats by contact, without circulation. If you buy our No. 389, you will there find a section, and full particulars relative to the Waltonian Case.]

AUTUMN-BLOOMING ROSES.

"I want a few of the best *autumnal* Roses. I do not find that many of the so-called perpetuums really do bloom in the autumn; or, if they do, they are but indifferent objects."—A SUBSCRIBER.

[If our selection of perpetual Roses is taken and done justice to, in good soil, the plants will not fail to bloom in the autumn.

Madame Laffay.—The most constant, the sweetest, and the latest of all good Roses to bloom. We have had it open freely in December, a whole degree of latitude north of Kent.

Baron Prevost.—The nearest to the old *Cabbage* Rose, in looks and smell.

Géant des Batailles, which we have now (end of October) in fine bloom.

Souvenir de la Malmaison, or the Malmaison Rose, which is now, and has been since last May, magnificent with us.

Duchess of Sutherland does not come so late, but is the fifth best on our list; and there is one half dozen old ones, and fifteen newer ones, claiming priority for the sixth place. Therefore, we shall not name the sixth to day, but rather ask all our Rose-loving readers which Rose or Roses did better with them this hot summer, and long, warm autumn, than those we mention? As to their management, if they are worked Roses, they would be better the nearer the ground they are budded. But most of our Roses are on their own roots. Of course, good soil, good drainage, with a liberal use of very rotten dung in winter, and the same of liquid manure during the growing season, are the chief points of culture; and, as to pruning, all sure pruning is founded on the strength of the plant that season. All we have named are moderate growers, and require to be cut back to from three to six buds, when worked on the Dog Rose; but on their own roots twice that length must be left, when the plants are established. But, in any doubtful case, it is more safe to cut close, than to leave too much wood on Roses.]

HERALDRY APPLIED TO FLOWER GROUPING.

In a back number, Mr. D. Beaton, after showing himself to have been confirmed in a matter of taste, or judgment, by the verdict of certain folks having authority, says,—“Therefore, my credit is as good as ever it was, and ‘GREENHAND’ ought to acknowledge it publicly.” Now, I (Greenhand) never impugned Mr. Beaton’s credit in such matters. I am so utter a novice in everything connected with gardening, that I should not be presumptuous enough to do so, even though his opinions were to clash with my own; but, on the contrary, I am happy to say that his valuable letters always show a taste confirming my own, and even furnish new thoughts which may be welcomed as congenial guests by the established tenants of my own fancy, or tend to the enlargement and better ordering of crude notions previously entertained. The only question I ever raised with him was one belonging as much to the trader as the gardener,—one of cost price,—*Tritomas* and *Tritonias*, to wit. I still think he owes me a turn on that score, but I will cry quits if he will only just tell me how to best treat the seeds from my *Tritoma uvaria*, which I have saved in good condition.

Many articles by Mr. Beaton, and especially one or two of late, plainly show that he not only attaches great importance to the arrangement of contrasts and harmonies of colour, as affecting the beauty of garden or bouquet, but is giving much attention to the rules—or rather to the facts which should originate rules—for grouping colours effectively. It has, therefore, occurred to me, that he would not be above considering the value of an idea upon the subject that has occurred even to a confessed *Greenhand*. It is,—whether a rule adopted hundreds of years ago, by a body of men whose occupation partook largely of the management of effects generally and of colours particularly,—I mean the heralds,—might not be accepted as indicating succinctly and with much, though of course not perfect accuracy, a proper method of horticultural and floral colour-grouping?

The rule I allude to is well known to all who understand anything of heraldry, though in some works it is not laid down in so many words. I find it, however, thus expressed in Clark’s “Easy Introduction,” Ed. 1825, p. 24:—“In composing arms, metals, and colours together, which was introduced as well to represent them at a greater distance as to imitate the military cassock of the ancients, who embroidered their *titia*, or cloth of gold or silver, with figures in colours of silk; and their coloured silk, on the contrary, with gold and silver; and hence it is that there is a general rule, that metal shall never be placed upon metal, nor colour upon colour.”

The words first italicised in the above sentence shows that the framers of the rule had, as a primary object, one that every gardener should carefully consider,—utilising the respective powers of colours to render them distinct in distance; and I think I can show that the rule does unfailingly tend to develop, not only the powers, but also the beauties of colours.

The tints, or hues, employed in heraldry are divided, as the above rule shows, into “metals” and “colours.” The metals are but two, yellow (representing gold), and white (for silver). The colours are red, blue, green, black, and purple. The consequence of the rule is, that we never see, for example, a yellow lozenge on a white shield, nor the reverse, for either would be metal on metal; nor a blue lozenge on a green field; nor a red lozenge on a blue, black, green, or purple shield; as either of these devices would be colour on colour. But let us, for illustration sake, suppose a violation of the rule. Put a yellow lozenge on a white shield (metal on metal), and a blue lozenge on a red shield (colour on colour): are not both effects bad? How cold the former, how heavy the latter! But reverse your tints, and, following heraldic rule, put the blue lozenge on the white shield, and the yellow lozenge on the red shield, and I think you will see that the first contrast (colour on metal) is most beautiful; and the latter (metal on colour), actually splendid; whether done in silk and gold, or in Verbenas and Calceolarias.

But applying the rule horticulturally, we could not edge a bed of yellow Calceolarias, or *Oenotheras*, with white *Alyssum* (metal on metal), nor place pink or purple Petunias alongside of blue Lobelia (colour on colour); we must, on the contrary, edge the Calceolaria with the Lobelia (metal on colour), and wed the silvery Alyssum to the richly-coloured Petunias. And thus we see, in that never-to-be-forgotten chain-work at the Crystal Palace, they have, probably without knowing it, followed this law. They have not put their *Tom Thumbs* on the bare lawn,—that would have been red on green, “colour on colour.” So they have on the green lawn, first, the white *Cerastium tomentosum*,—“Silvery Cerastium,” as Mr. Beaton says,—which is metal on colour; and within that silver border is scarlet *Tom* (colour on metal), while in the larger oblong links they proceed to place golden Calceolaria inside the scarlets,—metal on colour. So, in the centre rosery bed, white *Alyssum* or *Cerastium* is introduced between each bed of red Geraniums and the green lawn. Further, in all our gardens the yellow gravel walks are the heraldic borders to the greeny grass, and surely look better there than would paths covered with blue cloth, which would be quite as contrary to our heraldic rule as to the rules of economy or custom. Yet blue tiles would, so far as colour is concerned, look as well for an edging to a gravel walk as green box would, and either would be good blazon. White tiles, on the contrary, would look meagre and cold as an edging to yellow gravel, though they would not look at all bad defining a bed upon the lawn,—silver on green.

Through October, the best beds in my own little garden were a mass of splendid blue Salviæ, deeply set in the golden flowers of *Gaillardia picta grandiflora*, and a simple bed of crimson Verbenas, entirely surrounded by gravel,—both instancing colour on metal. On the contrary, a bed of *Delphinium formosum* (blue), surrounded by *Mrs. Holford* Verbena (white, or, say silver), looked well only so long as the fine colour of the Delphinium held the eye to the centre of the bed, showing the blue on the white; when that died out, and the white Verbena only showed against the encircling yellow gravel, the mixture gave a miserable instance of the bad effect produced by metal on metal.

I must not proceed fully to exemplify the application of this notion to bouquet-making; but, speaking practically, I have always found it produce a pleasing effect,—never a bad one. Can as much be said for the generality of nosegays, bouquets, and button-hole selections, made up without plan? I think not. The other day I snatched for my button-hole a splendid blue Salvia and a truss of *Lord Raglan* (crimson) Verbena. Do you think that would do? Not a bit of it. It looked as heavy as

lead. It was not heraldic, because it was not finished: it was as yet colour on colour. But when a little bit of pure gold (*Calceolaria amplexicaulis*) was slipped in my eye was satisfied, and so were the eyes of several, who, in our spare moments in the city, talk with me about our respective flowers.

Of course, I would not for a moment suggest this as an inflexible rule for the garden or flower vase. As Clark says, "it is only general, even in heraldry." But many exceptions to its application, which might look well, would, I think, look better if brought within it. Turning to Mr. Beaton, on the "Crystal Palace Bedding" (August 17, No 516), I find that almost all the beds containing two tints are composed nearly according to our rule, except such as include pink, of which I will speak presently, and *Tropaeolum elegans*, about which I must not stop to say a word, though I could say plenty. There are, however, three instances of exceptions, which, as I consider, may look well as composed out of the rule, but seem to me capable of improvement by it:—1st. *Cerise Unique* (rose, say red), with a centre of Heliotrope (purple). This I would either centre with yellow Calceolaria, or, if that be too showy for the *ensemble*, with those beautiful white Petunias, which did so well at Hampton Court. 2nd. A bed of Hydrangea (pink or blue), with a centre of Petunia (purple). This bed I do not recollect, and when I say it might look well, I make much the same mental reservation as I do when admitting that "pigs may fly." However, I think I could improve it under the rule, by not giving a centre to the Hydrangeas at all, and by cutting them off from the green grass by a band,—say, of *Golden Chain*, or silver *Cerastium tomentosum*. 3rd. A clump of purple *Zelinda* Dahlias, with Ageratum—say, blue,—in the middle. This might, indeed, look well; but I do think that Garter King at Arms would not be far wrong if he were to suggest "metal on colour, if you please, Mr. Milner: let us remove the Alyssum, and insert some golden African Marigold; or white Feverfew, if you think it will last out the season."

Finally, exceptions may certainly be made in favour of the colour pink. Now, the heralds never used pink at all; but, as gardeners and floral decorators do, I must consider how the rule before us would work upon it. We must certainly admit this tint among the colours, as a variety of red; but it is a red so blended, as it were, with white, that it has almost the effect of that metal tint, in enhancing, or being itself improved, by juxtaposition with at least three of the other recognised colours,—viz., blue, green, and black; and we may, probably, add fourth—purple: I have even seen a mass of pure pink (*Verbenas*) stand in mutually advantageous contrast with the fifth colour (in *Scarlet Geraniums*),—pure red. Thus, I am ready to admit that pink may often be excepted from the rule without disadvantage; and yet how well it stands to be treated by it. Take one more example from the Crystal Palace. Mr. Beaton says,— "Next is the magnificent bed of *Lucia rosea*, which I mentioned above, edged with a white Verbena; but a dark crimson would be the best edging for so light a flower as Lucia in the full sun." The improvement would not be an improvement everywhere, you see. The original heraldic placing—pink colour, with a silver edging, on green—would do in most situations; and where it would not, I feel pretty sure the mere substitution of a line of gold—say, *Golden Chain*—would delight the eye. Thus, I submit, pink, though not bound by the rule, does not tend to upset it.

Now, having had my say, I leave it to older hands, and especially to Mr. Beaton (if he will kindly consider the notion), to decide whether we may or may not safely say that,—"In the colour-grouping of cut flowers alone, or of growing flowers with grass and gravel, two or more colours—of red, blue, green-black, purple, or their varieties—should be relieved by the introduction of either yellow or white; and yellow and white should not be brought into proximity without the intervention of one of the above colours." —GREENHAND.

DRIVING BEES.

I OBSERVE in your paper, of the 26th ultimo, an article from your interesting friend, "THE DEVONSHIRE BEE-KEEPER," in which he describes the difficulty he has experienced in driving his bees; and, as in three experiments this season I have found no such difficulty, I think you may like to hear my plan.

I have two bands of inch wood—the size of the bottom of a straw hive—placed about six inches apart, and the interval filled with perforated zinc. To each end of this apparatus I firmly affix a hive; the full one—from which I intend to drive the bees—below, and an empty one above. Then sitting on the

ground, with little fatigue you can beat as hard as you like; but I have never seen it take more than a quarter of an hour; and all the time, through the perforations, you can watch their ascent. I have never found them vicious, and the only fumigation I use is a few puffs of tobacco ere I first heave them.

I send you a sample of our honey, which, you will observe, is greyish, and has a peculiar taste; and so it is in all the neighbourhood. What is the cause?—A LOVER OF THE LOWER ANIMALS.

[Your honey closely resembles that which we have tasted in Scotland, which derives its colour and flavour from the heather.—ED.]

THE REDBREAST.

A SLY little rascal, a pugnacious little upstart, and sometimes an ungrateful little rogue. How often have my children, amidst all the cold months of winter, whilst worms, grubs, and insects were safe in some snug retreat, or held fast in iron grip!—yes, how oft, for many winters past, have they ministered to the daily wants of some sturdy and bold begging Robin, who, when the first thaw commenced, started off without one good bye, nor ever cared to return, even to see if his old friends were so much as living, that he might come again next winter! But, generally, gratitude is very evanescent with him. Yet there are exceptions, as you shall hear.

Many years ago (I wish it were 2, instead of an 0 added to the same) I was staying at Monmouth, and, on the road to the tin-works of Redbrook, somewhat about a mile or more distant, chance led me into some fruit gardens. It was a bitter cold day in December, and a little lounging gave attraction to a fruit garden in winter, a place few would choose for a promenade at such a season. Whilst ruminating near the havoc of Brussels Sprouts, Curly Greens, and dead Raspberry canes, the old market-gardener returned, and very properly insinuated his desire to become acquainted with my business in his freehold at such a time and season. Matters were easily explained and arranged, as on we walked towards his cottage at the top of the garden, when out of a small summer-house, at a distance of some 100 yards, a plump little Robin came flying straight towards us and perched on my companion's hat, now on his arm and then on his breast. I was perfectly astounded, and had it been a vulture instead of a Robin my surprise could not have been greater. A crust of bread, ever ready in the gardener's pocket, was at Bob's service, and from the mouth of his protector frequently its meal was taken, whilst perched, falcon-like, on the good man's wrist. I learnt that some three years previously, during a very severe winter, this Robin had perched on my friend's arm whilst engaged in making his frugal repast on bread and cheese, about the same spot, on a most nipping, driving day, evincing no fear of him, or of his family, at any time. It was a hen, and had had many broods, but would never suffer one of them to approach her benefactor. This was a grateful Robin, it is true; but it was in the country, and in a garden, and much depends on confidence and association to beget familiarity.—W. H., Exeter.

NIGER EXPEDITION.

WE have been favoured with the following letter, written to a friend in Edinburgh, by Mr. Charles Barter. It is dated August 9th, when they were at the "Encampment Jeba, River Kworra, Nupe country, Central Africa?"—

"I left England with Dr. Barker two months before the exploring steamer sailed. This arrangement allowed me to visit most of the settlements along the west coast, from Senegal to Fernando Po: I stayed nearly a month at Sierra Leone, spending the time delightfully, in botanising the mountains of the peninsula. The low hills near the town are clear of trees, but the high mountains are still clad in their primitive forest. The trees are covered with epiphytes in these moist regions. Orchids and Ferns are abundant.

"I recognised many old hothouse acquaintances, but a large number were total strangers. Much remains to be done here, where a botanist has never resided. Sierra Leone has a population of 60,000 liberated Africans, and many of them are wealthy people. But there are no public gardens here, as in other colonies; cultivation of all kinds is, therefore, pretty much in the negro style of doing things. The people have been well crammed with orthodox theology.

"I stayed six weeks at Fernando Po. This island was given up

to the Spaniards on account of its insalubrity. I cannot help thinking it a great pity : it is the key to trade for this part of the coast. The climate is excessively hot and moist, and the whole island is covered with a dense forest, which, until cleared, must render the plain unhealthy ; but it has mountains over 10,000 feet high, on which Europeans may live. I think many East Indian products might be cultivated here. The Clove and Nutmeg would be at home. Cinnamon has been introduced, and has become wild. Vanilla is certainly indigenous. Coffee could be finely grown on the hills ; while the numerous moist valleys would suit Cocoa. The low shrubs near the town of Clarence are chiefly composed of Guava, Lime, Orange, and other fruits, which have spread amazingly. The Bread-fruit tree forms a beautiful object here : its large dark leaves and spreading habit, contrasted with Palms, can only be realised with other children of the tropics. Oil Palms form dense forests. Some oil is made, but most of the fruit falls and rots on the ground.

"It rained almost daily during my stay. I could ascend no elevations. Though I gathered many plants, most of them were lost in storing : the excessive moisture renders everything mouldy. Paper absorbs it from the air ; cloth and books have to be dried often before the fire. You may fancy, therefore, the difficulties of a plant collection in Western Africa.

"We entered the river in July, passed through the Delta without being molested by the natives,—though they have since attacked us,—and reached the confluence of the two rivers in August. All the lower parts of the river form a vast alluvial deposit, intersected by creeks, and covered with an impenetrable forest. A more horrible residence for human beings I cannot imagine, or a more degraded race. The towns are placed in swamps ; the fierce sun pouring down on the mud, sends up the proper stuff for fevers ; slimy creeping things inhabit the dwellings ; and the people are frequently covered with ulcers, and some loathsome in the extreme.

"A curious little fish is found in the Mangrove thickets. Its fins are adapted to form legs. It rushes out of shoal water on our approach, running over the ground, and climbing trees with facility.

"I did some botanising in these parts. I found some new plants and many Orchids : the genera of the latter were principally Angraecum, Bolbophyllum, Vanilla, Gaillardia, Polystichum, Eulophia. Ferns were very abundant, comprising the following genera :—Trichomanes, Adiantum, Pteris, Lastrea, Antropteris, Platycerium, Diplagium, Acrosticum, Lygodium, and many others, new to me. The trees are of enormous size in this region. Bombax, Eriodendron, and Oldfieldia, sent up trunks 100 feet high without a branch. Ficus also attains a great size ; but the former are the true monarchs of the forest. The Cocoa-nut Palm grows 180 miles from the sea, the limits of its range, which is also an indication that the sea breeze comes inland. A much drier region begins here, and plants which love moisture now disappear. An Artocarpus, with fruit like the Bread tree, I have gathered. I have some preserved. Its average weight is from 20 lbs. to 40 lbs. These trees are pretty thick in the forest. The fruit falls with a great crash, rendering it necessary to keep an eye aloft, when the feet need all.

"We left the tender which came with us, at the confluence, and proceeded up the Kworra with the steamer only. About twenty miles above former exploration, rocks became numerous. The ship struck on one under water, cracked in her bottom, and sunk soon after. The water was fifty feet deep close to where she struck, but luckily she rested on a portion of the rock : the stern remained out of water. In the scramble, none were drowned, but we lost most of our things. I lost my labours of months : I saved only one box of specimens,—that with some difficulty,—the water being up to my waist, and the ship sinking rapidly. We had some sick at the time. Putting these in a safe place was our first effort, or many things could also have been saved. I lost nearly 800 specimens of dried plants, and all my living ones. This occurred ten months ago. Ever since we have been living in a rude sort of camp, in expectation of a steamer coming to our assistance. From various causes, no ship has yet reached us, but some supplies have come to us overland. In the mean time I have collected about 2000 more plants, by making journeys in various directions.

"This region is very dry : we have six months of perfect drought and frightful heat, the average range of the thermometer, in our thickly-matted tent, being 108° at mid-day, and rising to 145° in the open air. No forests occur ; no Orchids ; no Epiphytes ; no Ferns, or very few. In fact, a very different vegetation distin-

guishes this from the coast region. Oil Palms are less abundant, confined to the banks of rivers ; but magnificent Fan Palms occur, which, together with immense Boababs, give still a tropical character to the vegetation. The Boababs, from their immense size and grotesque aspect, battered by storms, and charred by fire, look like the remains of an 'extinct creation,' so little do they harmonise with existing scrubby trees.

"I have been up the river in a boat as far as it is navigable, — i.e., about 600 miles from the sea,—a point before undetermined. We obtained an old volume of poor Mungo Park's, near Bouzra, —a book of logarithms. It contains no notes of value.

"I am sorry to say we have had much sickness. I have buried just half of the steamer's crew. Fever commenced soon after we entered the river. The deaths have since occurred at intervals. No deaths have taken place in the Government party. We muster but five now ; but one left some time ago, through sickness. On the whole, we may consider it a triumph that so many remain, under all the trying circumstances of our situation ; and great credit is due to Dr. Barker, our principal, on this head. He is a very pleasant man, fond of botany, so we get on well together. My health has been excellent. I have never been prostrated by fever, and feel as well as on leaving home. Ague sometimes, after a day spent in botanising in a swamp, reminds me that I am in Africa. Some of our party have had, however, very narrow escapes.

"The people in the interior are more civilised,—very civil and kind to us : they do not want us to leave them. I roam about perfectly safe, in this respect. Wild beasts are not uncommon. Leopards used to give us much trouble ; elephants have been killed close to our camp, but I never saw one alive ; buffaloes are dangerous ; hippopotami threaten our boats in the river ; and crocodiles look out for bathers. We shall go down to Fernando Po when the steamer comes."

NOTES FROM BISHOP'S WALTHAM.

I ENCLOSE you a printed paper on an American production, called "Oswego Prepared Corn." I and some of my friends have tried it, and think it superior to Arrowroot, for puddings. We should like your opinion of it.

I have grown upwards of 20 lbs. of Grapes on my espalier Vines this year, which are perfect, and not in any way affected by Oidium, or otherwise. A friend of mine, whose Grapes were attacked by the disease, and who dusted them with black sulphur in the summer, has now made, or prepared to make, wine from them ; but the juice is so strongly impregnated with the sulphurous flavour,—something like that of sulphuretted hydrogen gas,—that he fears he must throw it away, which would be a pity and great waste. Can you, or any of your clever correspondents, tell him what he may do to get rid of this disagreeable and unwholesome odour and taste, without losing the liquor ?

I have a valuable and rather remarkable hen, whose parentage, or genealogy, I am not aware of ; but you will perhaps say she is of Spanish extraction. She was jet black ; but, in moulting, the tips of many of her feathers have become white. She is of a very vicious temperament, so that other fowls dare not approach her : even a cat or a dog stand but little chance with her. She will not scruple to attack the hand that feeds her. Yet she is a very excellent layer and sitter, and laid 94 eggs in 174 days, omitting only one day occasionally during the whole time ; and, after resting a month, went on laying again. Her eggs are all very large and good. If these should be the characteristics of Spanish fowls generally, I must prefer them to any others I have hitherto met with.—T. M. W.

[The Oswego Arrowroot is the starch of Indian Corn, and, from experience, we know it to be nutritious and wholesome, and far superior to that which is frequently sold under the name of Arrowroot.]

ON THE USE OF BEE BREAD, OR POLLEN.

I HAVE long had a suspicion that pollen, or bee bread, is used as food, not only for the grubs, but also by the mature bees ; but, as everybody, from Reaumur and Huber downwards, has stated that it is used solely for feeding the grubs, and some writers have even accused the bees of improvidence in collecting a larger store than could be required for that purpose, I kept my suspicions to myself, knowing how readily an outcry is raised

against any one who dares to differ from a very general opinion, especially if backed by the authority of a few great names. That this is the case I know full well, as at present I am labouring under the imputation of Atheism, Deism, Materialism, and a host of other wicked *isms*, from my having read a paper, at the British Association, on the formation of the cells of bees, in which I detailed a number of experiments, tending to show that the bees possess no geometrical instinct, but that the shape of the cells is produced by the manner in which the comb is formed.

To return to the subject of bee bread. During the last season I have performed several experiments as to the use of pollen, which conclusively prove that it is largely employed as food by the mature bees.

Kirby and Spence, in their delightful introduction to entomology, notice a fact which has been overlooked by almost all writers of bee books,—namely, that when a bee laden with pollen rests on the alighting-board, others often eat a portion from her thighs. It may be replied, that this is merely preparatory to its being disgorged into the cells containing grubs. To put this matter to the test of experiment, I drove a stock of bees into an empty hive, having in it a few pieces of empty guide-comb. The next day the bees were busily at work, building comb, and collecting honey and pollen. I caught several of the pollen-laden bees, and, taking the masses off their thighs, placed them on the alighting-board, and found that they were eaten by the bees,—neither eggs nor grubs being in the hive. The effect was repeated several days with the like result.

About a month since, I had the bees from several common skeps given to me by my neighbours, provided I would come and take them. With these bees I have established several good stocks, by putting them into empty hives, and feeding them abundantly. In the compartment in which the bees were fed, I placed a large piece of old comb full of pollen. The whole of this was eaten out by them, there being no grubs to feed.

To render the proof still more conclusive, I placed some masses of pollen on the alighting-board of the hive; and noticing the bees that devoured it, I captured them, and, on dissection, found the proventriculus and stomach both filled with pollen, and this at a time when there was an abundant supply of syrup, mixed with honey, in the feeder placed inside the hive.

All these circumstances seem to me to lead inevitably to the conclusion, that pollen is an article of food to the mature insect, as well as when in the grub or larva state. It may be replied, that hives often perish in the winter from a want of honey,—the bees dying of starvation, with abundance of pollen in the cells. So would a number of men in a ship, with abundance of arrowroot on board, if there were no other edible substance. But no one would say, therefore, that arrowroot was not useful as food. Pollen may be to bees, as starch is to man, a valuable,—nay, a necessary, article of food, and yet, taken alone, unable to support life.—W. B. TEGETMEIER, *Muswell Hill*.

TO CORRESPONDENTS.

GREENHOUSE GAY IN WINTER (*A Constant Reader*).—Forcing Camellias and Azaleas into bloom by Christmas is rather uphill work, unless they are well up to the mark, and are very forward already. If so, your house may be kept 10° to 15° warmer by day in particular, also a little warmer at night. There are very many plants that you should have, that would assist you to make your greenhouse gay at Christmas, after the Chrysanthemums are out of bloom:—Such as *Daphne Indica*, one or two plants; *D. Indica rubra*, two or three plants; *D. Dauphinii*; also, *Jasminum nudiflorum* (this, though hardy, is worth a place in a greenhouse); *Cuphea platycentra*; *Correas*, of several kinds; *Epacris impressa*, and several others of this family; Heaths, such as *Erica Willmottiana*, *E. Linnæoides*, *E. hyemalis*, and many others that flower at this season; *Coronilla glauca*; *Genista linifolia*, and *G. Canariensis*; also, *Cytisus racemosus*; *Fuchsia serratifolia*, when properly grown, makes a good winter-flowering plant; *Ageratum caeruleum*, and *A. umbellatum*, with several pots of *Cinerarias*, Chinese Primroses, Violets, &c., would make the greenhouse quite gay at Christmas. The name of the plant you sent is the *Chrysanthemum Montpelieriense*.

BEURRE SUPERFIN PEAR (*Subscriber at Newport*).—Write to Mr. Rivers, *Sawbridgeworth*.

MIXED SALINE MANURES (*O. H.*).—To prepare these requires more chemical knowledge than is possessed by most people. Thus, your proposal to mix sulphate of ammonia with super-phosphate of lime would cause a double decomposition, and sulphate of lime and phosphate of ammonia would be the result. We should apply the sulphate of ammonia and salts of soda at the time of the last ploughing, ploughing them in, and drilling the phosphate in with the seed. Quantities must vary with soils, and other considerations. Buy Mr. Cuthbert Johnson's volume on "Fertilisers."

PROPAGATING LOBELIA ERINUS COMPACTA (*W. P.*).—There are two kinds of *Lobelia erinus compacta*,—a white and a blue. They do not seed, and at the end of October they cannot be struck from cuttings without the highest

skill in propagation, and the necessary appliances of the propagating department. Therefore, your only chance is to take up some of your plants on a dry day, and to pot them. They are not difficult to keep over the winter, in a window, and should be outside every fine day. All, or almost all, dealers who advertise at a very low figure, consider that anything is good enough for those who run after cheapness. The cheapest plant, seed, bulb, spade, rake, nail, or button, always was, and always will be, the dearest, in the long run. The pleasure of running after cheapness is just as sweet and lawful as running for the Derby. There is no very good white hybrid perpetual Rose.

BERRIES (*S. C. W.*).—The berries you gathered in Guernsey are those of *Ruscus aculeatus*.

PARKES' PATENT DIGGING FORKS (*Superintendent of Fork Husbandry*).—The prongs being steeled are, if broken, very difficult to be mended by welding, and, as you say, "soon break at the piecing place." To prevent this, try having two small rivets put through the parts welded together.

WORMS ON GRASS PLAT (*J. W.*).—The best mode of driving them away is to sprinkle a little common salt over the surface, at the rate of ten bushels to the acre, as often as their casts show that the previous application has become too much washed away by the rains to inconvenience them.

TRANSPLANTING JUNIPERUS RECURVUS (*Rev. S. G. W.*).—You had better move it immediately. If a wide trench at three feet from the stem is cut first on one side, and then the earth picked away underneath, a sack may, by degrees, be got entirely under it, and the whole lifted up with very little disturbance of the roots. Have the hole to receive it previously dug, and gradually wash in fine earth among the roots. Neither your Juniper nor your Cypress are trees difficult to remove.

NAMES OF FERNS (*P. R.*).—1. *Lastrea dilatata*. 2. *Cystopteris fragilis*. Apparently the variety Mr. Moore calls *semperfervens*, which is evergreen, grown under glass, and not brittle-stalked, like the common kinds. 3. *Asplenium umbrosum*. A species belonging to the genus *Alantide*, which is regarded by some as a genus distinct from *Asplenium*.—M.

NAMES OF PLANTS (*D. M' Ewen*).—From the crushed specimen received, we incline to think it is *Solanum pseudo-capsicum*, or False Capsicum, sometimes called the Winter Cherry. (*W. G.*).—1. *Leptospermum bullatum*. 2. *Prostanthera violacea*. 3. *Sollya linearis*. 4. *Oxalis rubella*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

NOVEMBER 30th and DECEMBER 1st. GLASGOW. Sec., Mr. R. M'Cowan. Entries close November 17th.

DECEMBER 7th and 8th. NORTH DURHAM. Secs., R. C. Coulson, J. T. Duncan, and T. Wetherell. Entries close November 22nd.

DECEMBER 8th. WILTSHIRE. Sec., F. W. Phillips, Devizes. Entries close November 30th.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. II. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

DECEMBER 29th and 30th. BURNLEY AND EAST LANCASHIRE. Sec., Angus Sutherland. Entries close December 10th.

JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakley.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

N.B.—*Secretaries will oblige us by sending early copies of their lists.*

HINTS TO EXHIBITORS.

WHEN we have entered on the month in which the Birmingham Show is held, we feel it our duty to give some useful hints to exhibitors. We are aware that many of our readers know as much of these matters as we do, and we, therefore, do not pretend to teach them; but the prize-sheets every year prove that the list of competitors is recruited by new names; and it is also often seen, that a pen which should have figured among the prize-takers has lost its place by the non-observance of some rule, or by the neglect of some precaution.

As mere weight will not insure success in any class, our first admonition is, not to fatten the birds. They cannot be too heavy, provided the weight is made up of flesh. If any are in difficulty how to manage this, we will endeavour to teach them. If birds have food continually before them, they get sick of it, and will not feed. Too often they are then tempted with variety and delicacies, they are still induced to eat, they have no motive for exertion, and squat about with full crops, fat insides, and diseased livers. Such will attain great weights, but they are never in con-

dition to take a prize: they will be dull and sleepy in their pens, and are loose and soft in hand.

Feed them moderately in the morning with ground oats, or oatmeal, mixed with water: throw it on the ground so long as they will run after it,—not one morsel after they cease to do so. Scatter some whole corn in the daytime among the grass, that they may have to seek it. Feed them in the afternoon as in the morning. They may be fed with little pieces of bread, or anything of that sort, at any time; but they must always be hungry enough to be on the look out. This treatment is quite as essential for plumage as for flesh. A fat bird is never in good plumage: its feathers are soft and loose. They should have a grass run, and some dry place, where they can bask, and roll themselves *in dust*. The only fowls that improve by a short confinement are the Spanish: they should be kept for some days in rather a dark place. In Ducks and Geese, provided every other point is perfect, weight is more important than in fowls.

The cock and hens that are to appear together in the pens should be thoroughly accustomed to each other, or the cock will very likely beat one of the hens: this is mostly fatal to success. Not only should they be used to each other while running about, but they should be shut up together in a pen of about the same size as those used at exhibitions. Many a hen is disliked and beaten by the cock, but shows no marks of it, as when at liberty she can always escape. The same hen put in a coop, and finding she cannot get away, will stand still while the cock *eats* her. They should, also, sometimes be fed in such a coop, or pen, that they may be accustomed to come to the front of it, otherwise they slink to the back, and remain there. As it is not easy to win with everything in favour of the birds, it stands to reason that any defect of quality or management diminishes the probability very much.

They should be sent in round baskets, high enough for the birds to stand up in them; and a canvass covering is better than any other. They should be well fed before they start, on sopped bread, given very wet. They should have no whole corn. In every pen the combs must be alike.

Exhibitors are sometimes deterred from sending their birds, on account of some trifling accident to one of them. That which is visibly an accident is not a disqualification, unless it is like one of those seen years ago, when Cochin cock's tails were continually meeting with them.

POULTRY IN A VERY CONFINED SPACE.

I HAVE no doubt that the letter of your correspondent "WHITE GAME COCK" will interest many, who either have no run for their poultry, or who, with a limited run, wish to keep more than one variety. I confess to being one of the latter class. I have a very fair space for one set, but every show makes me uncertain which breed I prefer for beauty, though I have no doubt which to prefer for eggs.

I should like to know from "WHITE GAME COCK" how he cleans his light sandy soil, or, if the manure sinks into it, how he prevents it from becoming sour? I should also like to know how often it should be either wholly changed or partially removed and renewed? and how many birds he would expect to keep healthy in a space of twenty feet by forty feet, or any other space he will name as a standard? Moreover, though Spanish and Cochins bear such confinement, will Dorkings, as he says, do so? If they will, his experience controverts all the axioms ever laid down in THE COTTAGE GARDENER. As to Cochins, I cannot help questioning the answer given to a query of mine last week, about the influence of a grass run. I think it must preserve the bright-yellow colour of the legs, and I think I have found it do so. I have certainly but a limited experience, but I never found my birds fail in this respect, where they had such a run. This year, I brought up one brood as an experiment, hatched out of doors, without any forcing, or special care, and never under a roof since; and though their growth was much slower than that of the others, the leg colour in particular was perfect; which I take it, shows hardiness as well as genuineness of breed. And, therefore, I suspect that old birds may hatch broods less perfect on this point, though improving in other points, as, for instance, size. Does "W. G. C." find they keep a good colour under cover? Is sand better than mere dry dust as a soil? or, again, if sand were laid down some inches deep, would it contain any insects, or breed any, for the birds to feed on? or would an occasional sprinkling of

common earth be beneficial in this way, as giving them a scratch, and chance of natural animal food?—A. S. B.

[We publish some notes on the same subject from another correspondent, but "WHITE GAME COCK" will oblige by replying to the queries of "A. S. B."—ED.]

READING an article in a recent number of THE COTTAGE GARDENER, on this subject, I feel disposed to send a little of my own experience, for the benefit of your readers.

I keep three sorts of fowls in a very confined space. Black Spanish, Silver-spangled Hamburgs, and Cochins. They have each a small space penned off, which opens into a rather larger space; but the whole would be considered a very small run for poultry. The aspect is north-east, slightly open to the south; therefore, a very cold aspect, although they have the morning sun. Each lot are, generally, allowed to run in the outer space some portion of each day.

Now, of these three sorts, although I consider all do well and thrive, yet none equal the Hamburgs for eggs, and their pen does not exceed six feet square.

I have a cock and five hens. The latter commenced laying the 13th of January, and have continued to lay, without intermission, until the present time. For many months I had four or five eggs almost every day,—occasionally three. Now three of these hens are moulting, yet I have one or two eggs daily from the other two. To day (October 27th) I have had two eggs.

I think this worthy of notice, as Hamburgs are considered especially to require a good run. They have a variety of food, and a good deal of green meat. Their food consists of barley, oats, soaked peas, buckwheat, specks, malt dust, and rice, with potatoes and any other odd bits from the kitchen.

Their roost is very small indeed, with fine cinder ashes and a little dry lime strewed at the bottom, and raked over once a week.

If Hamburgs thrive under such disadvantages as these, surely they will thrive anywhere.—SILVER SPANGLE.

NATIONAL COLUMBIAN CLUB.

THE monthly meeting of the above club was held on Tuesday last, at Anderton's Hotel, Fleet Street, when some good specimens of Almond Tumblers, Jacobins, Tuscans, Runts, Owls, &c., were shown by Messrs. Harrison Weir, J. Ansted, Towse, Griffith, Percival, Esquillant, Hall, and Southwood.

It was arranged that the grand Annual Show should be held on Tuesday, the 8th of February, 1859, when the public will be admitted between the hours of one and five, on the production of tickets, to be obtained gratis of any member. Some other business was transacted, and Mr. Ridley, of Brighton, was nominated as a candidate for election at the ensuing meeting, to be held on the 23rd of November.

OUR LETTER BOX.

REQUISITES IN SILVER-PENCILLED HAMBURGS (J. B.).—We will take the cock from head to tail. Full double comb, spiked behind, the spike turning upwards, full of erect points. No hollow in the centre. White hackle, saddle, and body. Perfectly white, and not over large deaf ear. Blue legs. Four claws only on each foot. Foundation colour of the tail and tail coverts glossy black, every feather being edged with a silvery white. The comb must sit firmly and straight on the head. A little spotting on the tips of the wing feathers, and the suspicion of a shade in the saddle, are not considered disqualifications. A tail where the silver predominates over the black is a decided fault, and if the feathers be entirely grey the bird should be discarded.

SCOURING IN POULTRY.—"I have heard that boiled milk is good for curing any tendency to scouring. Is it so?"—H. S. B.

[Yes. A mixture of chalk in the food is also good. A thorough change of diet will cure scouring. Feeding much on rice will cause it, as will cold, damp, and dirt.]

LONDON MARKETS.—NOVEMBER 8TH.

POULTRY.

There will probably be little difference in quotation for the next three weeks, save what is caused by the weather. If cold and dry, prices will slightly improve; if close and damp, they will decline.

	Each.	Each.	
Large Fowls	4s. 0d. to 4s. 6d.	Hares	2s. 0d. to 2s. 9d.
Small ditto.....	3 0 " 3 3	Partridges	0 8 " 1 2
Chickens.....	2 3 " 2 9	Grouse.....	2 0 " 2 6
Geese	6 0 " 6 6	Pigeons	0 8 " 0 0
Ducks	2 6 " 2 9	Rabbits	1 3 " 1 4
Pheasants	2 3 " 2 6	Wild ditto.....	0 8 " 0 0

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	NOVEMBER 16—22, 1858.	WEATHER NEAR LONDON IN 1857.					Sun Rises.	Sun Sets.	Moon Rands.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.							
16	TU	Correa speciosa.	30.149—30.133	51—27	E.	—	22 af 7	8 af 4	16 af 1	11	15 4	320	
17	W	Correa pulchella.	30.177—30.027	49—31	E.	—	24 7	7 4	32 2	12	14 52	321	
18	TH	Coronilla glauca.	30.222—30.182	54—40	E.	—	25 7	5 4	52 3	13	14 40	322	
19	F	Cytisus Attleana.	30.252—30.256	46—32	E.	—	27 7	4 4	18 5	14	14 27	323	
20	S	Daphne Indica.	30.271—30.230	50—40	S.W.	—	29 7	3 4	48 6	15	14 13	324	
21	SUN	25 SUNDAY AFTER TRINITY. [PRINCESS ROYAL BORN, 1840.]	30.309—30.220	53—29	S.W.	—	30 7	2 4	rises	13	13 58	325	
22	M		30.155—29.867	56—41	N.E.	—	32 7	1 4	37 4	17	13 42	326	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 49.1° and 35.3°, respectively. The greatest heat, 62°, occurred on the 16th, in 1840; and the lowest cold, 15°, on the 16th, in 1841. During the period 102 days were fine, and on 115 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

TAKE advantage of frosty mornings, to get manure wheeled on to the quarters where it will be wanted; and get all spare ground trenched and ridged as soon as possible. The hoe to be kept in active use, to destroy weeds between the rows of growing crops, and to loosen the surface-soil, to invigorate the plants by the admission of atmospheric influences.

ASPARAGUS.—Cut down the stems close to the surface of the ground; hoe and rake off the weeds into the alleys; cover the beds with a good coat of rotten horse-dung; dig very little out of the alleys,—which should be eighteen inches or two feet wide,—laying a good portion of the earth of each alley, to the right and left, equally over the beds, and burying the weeds in the alleys as you proceed.

ENDIVE and LETTUCE (in frames).—Admit air freely in fine weather. Sift dry dust carefully amongst them, to absorb any superabundance of moisture, to prevent mouldiness, mildew, or canker, and also to assist in giving vigour to the plants.

HEBB-BEDS.—To be cleaned and dressed for the winter. A slight coat of very rotten dung to be laid on, to protect the roots from severe frosts, and to enrich the soil.

SEA-KALE.—If wanted for table at Christmas, the crowns of the plants should be covered with a cone-shaped mound, two or three inches deep of sand, leaf mould, or coal ashes. Pots to be then placed over a portion of the plantation, and the intervals, or space between the rows, to be filled with leaves; and stable-dung, that has been slightly fermented, as for a hotbed,—beating it firmly down with a fork,—to be covered to the height of six or nine inches above the tops of the pots. Small hazel, or other such pliable rods, bent over each stool, or plant, in the shape of an old-fashioned beehive, and covered with a little long litter, is an excellent substitute for pots.

SPINACH.—When gathering the leaves, as much as possible avoid treading upon the beds, as their growth will be checked by having the soil consolidated about their roots.

FRUIT GARDEN.

FRUIT TREES.—Continue to plant and prune, as advised in preceding weeks.

RASPBERRIES.—Plant strong, well-rooted suckers in good, deeply-trenched, and well-manured soil, about four feet from row to row, and three feet from plant to plant, putting three plants in a cluster in the row. In old plantations, cut out the old stems that have borne fruit this year. Thin out the young shoots to three of the strongest on each stool, shortened at the top.

FLOWER GARDEN.

As finer weather could not be desired than that which we have had lately, it is to be hoped, that where alterations and the planting of trees and shrubs, or other important operations connected with the garden, were to be made, they have been carried into execution, as advised in

preceding weeks, or are now in active progress; as satisfactory results will in a great measure depend upon the operations being performed in due season.

Take up the roots of *Lobelia splendens, fulgens, ignea, propinqua*, &c., and store them in a frame, or in boxes filled with earth; to be placed under the stage of a greenhouse, or in any other such dry place, until they require parting in spring. The great object to be kept in view is, to prevent them from damping-off in the winter.

CARNATIONS and PICOTEES.—Give them plenty of air and light. Slight frosts will not injure them; but close confinement, or too much codling, will bring on the spot, mildew, and a yellow and sickly appearance.

CLIMBING PLANTS.—Plant and train against walls, buildings, arbours, &c., *Virginian Creepers*, which will succeed well in towns or cities in any situation; also *Ivy*, in a more open, airy situation; *Honeysuckles*, *Virgin's Bower*, *Jasmines*, *Passifloras*,—all of the hardy sorts.

PITS and FRAMES.—On a fine day, when the lights are off, look carefully over all free-growing plants, and pinch out the tops of the shoots, to keep them dwarf and bushy; also remove dead leaves and flower-stalks.

RANUNCULUSES.—Look over the roots occasionally, to ascertain that the stock is free from damp, as few plants are more susceptible of damp at this time of the year, and on no roots does it exercise a more pernicious influence.

TULIPS.—Lose no time in planting, if not already done, as a more propitious planting season could hardly be experienced; and those who have taken advantage of the late fine weather for planting all such things, as already advised in preceding weeks, will reap the benefit of it in the health, vigour, and bloom of the plants next season.

WILLIAM KEANE.

CRYSTAL PALACE CHRYSANTHEMUM SHOW.—NOVEMBER 6TH.

LIKE Lord Palmerston, no sooner were their backs turned on the Inkerman doings, than the Crystal Palace people pitched into the Chinese, and overhauled their Chrysanthemums. I never saw so many Chrysanthemums at one show: but I expected greater competition. The show was ten days too soon for the best exhibitors.

The Horticultural Society used to have their routine shows after the long vacation, during the first week in November, and the last show for the year a month later, by which they missed the Chrysanthemums altogether, or never had enough of them to make much impression. But through the industry of Mr. Broome, our friend at the Temple Gardens, and the circulation of THE COTTAGE GARDENER, the public taste had been so cultivated, that the Horticultural Society was compelled to alter their November show day, on purpose to meet the Chrysanthemums, just as I had been urging on them for the last six or seven years. From the 15th to the 25th of November, on the average of twenty-five years, the Chrysanthemums are at their best, according to my register; therefore, the Horticultural Society is just in the right time for them this season, and the Crystal Palace

people were much too soon for them. Still, as I have just said, I never saw so many of them, nor yet one half so many, at any one show.

The large Chrysanthemums were first-rate, but the Pompones were hardly up to the same pitch. The unnatural way most growers train the Pompones is very much against them. The best trained Geranium and Pompone I ever saw were perfect ugliness to my eye. That "squat" system, as Mr. Marnock named it long since, is, or may be, very well for people who squat on their haunches, and tattoo their bodies, but it is not a system to assist nature, or heighten the natural beauty of the plants. By the bye, the squat system is a perfect symmetry, and without symmetry, Dr. Lindley says, there can be no beauty. So there must be a screw loose somewhere in public judgment.

One thing pleased me very much, and that was, that the Crystal Palace authorities have done what the Horticultural Society had left undone all these years. They have undertaken, on their own responsibility, the task of exhibiting both tribes of Chrysanthemums, trained just as the great ladies all over the country have them trained for their conservatories at home; and thus have begun the difficult task of reforming a vitiated taste—a low life above stairs, as it were. I shall only instance *Bob*, among Pompones, which was the best trained plant of any kind I have ever seen. This plant was as natural-looking as if it were growing out in the free border: the shoots were a little wider apart than they would come of themselves, and that allowed the lower side-shoots to bloom as freely as the tops of the principals. Every one of the largest, as well as Pompones, can be thus trained, and the plants, will then bloom half as long again as they possibly can do by any kind of twist training.

Some of the best of the large Chrysanthemums—from the collection of the Crystal Palace—were in tubs, and as large as two men could move about, with many hundreds of flowers on each, and each trained like *Bob*: they can be seen about in the Palace all this month. So the right taste, the natural and most economical way, will soon be regained. It is really and particularly shocking, to see the absolute frights some people make of the lovely and most graceful Pompones, by their squatting and pothouse training. But if you want to see Chrysanthemums in true style and magnificence, go to the Crystal Palace on purpose, and ask to see *Bob*, *Temple of Solomon*, *Christine*, *Pilot*, *Pio Nono*, *Lucidum*, *Formosum*, and scores like them.

Mr. Salter, of the Versailles Nursery, Hammersmith, sent seventy-two kinds of Pompones. They were cut flowers, and not for competition. They were in bunches of from ten to twenty flowers of a kind. Also, two splendid, large new Chrysanthemums (his own lucky sport from *Queen of England*), called *Golden Queen of England*, and *Prince Albert*, the best dark flower yet seen, in the style of *Madame Poggi* (*Poshi*), "but twelve times better," as a friend of mine remarked; and also three kinds of new Pompones, one of which, *Mrs. Dix*, is the best I have seen: it is in the style of *Madame Fould*, which was the best last year, perhaps a little larger, and decidedly a better colour—a light peach colour, edged with cherry. That is the natural colour in the open air: in-doors it will probably be as light as *Madame Fould*; for every shade of blush, pink, and peach among them gets bleached lighter under glass. The second, *Miss Talfourd*, is a large white. The third, a *Miss Julia*, is a dear little brunette, almost bronzed from the cradle, after the manner of *Alexandre Pélee*, but a much closer, smaller, and better colour. These five new ones are to "come out" next spring, and, depend upon it, there will be a scramble for them: the *Golden Queen of England* can be dressed to look just like the yellow-haired laddie of Scotland; while the *Prince Albert* will be a puce pyramid from the hands of the hair-dressers.

Out of the seventy-two cut kinds, I assorted the following, as the best in their colours:—

LEMON YELLOW.—*Général Canrobert*, *Aigle d'Or*, and *Ida*.

GOLDEN YELLOW.—*Triomphe*, *L'Escarboucle*, *Mr. Astie*, and *Ascanie*.

WHITE.—*Snowflake*, *Marabout*, and *Argentina*.

BLUSH.—*Clorinde* (a quilled kind), *Madame Dutour*, *Miranda*, and *Madame Rousselon*.

BLUSH WHITE (with a creamy tinge).—*Madame Fould*, fine.

PINK SHADES.—*President*, *Cleobis* (a lilliput), *Centrillon*, *La Carmelite*, *Duruflet*, and *Trophée*.

PURPLISH RED.—*Pygmalion*, *Madame Carnae*, and *Salomon*, three exquisites: *Salomon* is the darkest in the family.

DARK PURPLES.—*Bob*, *Brilliant*, and *Bossuet*, when the latter is opening; but afterwards it is redder, or more amaranth, and fully as large as *Bob*. If the habit of *Bossuet* is as free as that of *Bob*, depend upon it *Bob* has a powerful rival in it.

FANCY COLOURS.—*Minette*, very small, and light bronze; *Morceau*, rosy purple, and silver edged; *Comte Achille Vigier*, mottled pale salmon,—a general favourite, and, perhaps, the most curiously coloured in the family.

The competition for large Chrysanthemums was very close, and Mr. James, of Stoke Newington, took the best prizes in threes, in sixes, and in single specimens. His three lot was—*Defiance*, *Christine*, and *Annie Salter*. His six were—*Annie Salter*, *Pilot*, *Pluto*, *Vesta*, *Mount Etna*, and another. His single specimen was *Defiance*. Another single specimen, from Mr. Arthur Wortley, of Stoke Newington, also took, and received most deservedly, a first prize. It was a six-feet across plant of *Annie Salter*. Mr. Wortley had the second best prize for sixes,—*Pilot*, *Defiance*, *Annie Salter*, *Mount Etna*, *Vesta*, and *Christine*; and Mr. Wortley had a second prize for a single *Trophée*, a fine specimen. Mr. George, gardener to J. Nicholson, Esq., Stamford Hill, had a first prize for a fine single specimen of *Cedo Nulli*; and a third prize, for a single specimen of *Fenella*, to Mr. Brown, gardener to J. C. Thurem, Esq., Dulwich; and a fourth, also for a single *Fenella*, five feet across, but only coming into bloom, to Mr. Cannel, gardener to E. Grove, Esq., Tulse Hill.

There was a difference here in the prize schedule,—a class for plants on single stems, and a class for plants on many stems. The prizes were awarded accordingly; but, to our sense of the public sight, they were six of the one and half a dozen of the other, owing to the vulgar taste of training the plants into senseless and unnatural shapes. So here, again, for the sixes or the half dozen. In them, the first prize for six plants went to Mr. Wortley, of Stoke Newington, for *Cedo Nulli* (on the label *Ceda*), *St. Thaïs*, *Brilliant*, *Duruflet*, and *Drin Drin* (with the tally of *Requiqui*, in the pot). Second prize to Mr. Turner, not of Slough, but of Stoke Newington, the cradle of the race, where the best wet-nurses for them must be looked for: his plants were—*Requiqui*, *Comte Achille Vigier*, *Drin Drin*, *Brilliant*, and *Duruflet*. And a third prize to Mr. Walker, Upper Clapton, for unnamed plants, which were—*La Vogue*, *Requiqui*, *Madame Rousselon*, *Cedo Nulli*, and *Trophée*.

For ten kinds, Mr. Forsyth, nurseryman, Rectory Road, Shakelwell, was first, with—*Requiqui*, *Cedo Nulli*, *St. Thaïs*, *La Vogue*, *Alexandre Pélee*, *Bob*, *Surprise*, *Brilliant*, and *Madame Celestine Philopel*, a very fine yellow, which I never saw before. Mr. Bragg, of Slough, was second in this class, in which he made a dashing entrée for *Madame Fould*, for the first time in an English assembly of rare beauties, and her rare anti-pudibundus blush carried the day. Mr. Bragg could only get her Madameship late last spring, unless, indeed, he eloped with her early in the season; yet she is already wide to the full stretch of her crinoline. Over three feet across,

since last May, is doing it, certainly. He had, also, *Général Canrobert*, *Adele Prisette*, *Mustapha*, *Aurore Borealis*, *Hélène*, and more common ones. He had, also, a second prize in sixes, in which were—*Comte Achille Vigier*, *Model*, *Mignonette*, *St. Thaïs*, and *Bob*.

Mr. Forsyth had the first prize for sixes, in eight-inch pots. Here *Madame Celestine Philopel* took the lead over five other well-known beauties.

Now, begging pardon of those not named above or below, let us go to the CUT FLOWERS. They were magnificently and splendidly dressed. Let them talk against dressing till the comet comes back again, but they shall never get me to join them against dressing babies, fine-looking ladies, and Chrysanthemums; for they all bear to be dressed to the full top of the pitch, without ever looking to be overdone. The half-crown-day visitors joined us, and loads of seats had to be brought from before the orchestra, for wise people to sit down in front of the dressed side of the cut-flower stand, which occupied a long way in the centre of the great east transept.

Depend upon it, nothing will go down at a show so well as dressed flowers; and, as the Chrysanthemum is also shown in the natural way, and as there is no disguising the fact of dressing,—and no prize is offered for undressed cut flowers,—there is not only no deception in it, but it is a positive model for improving the race. It is only what nature will do when she is tickled on to do it. Whereas, the way they have of distorting the plants, by their Chinese way of cramping their beauty, is exactly the opposite and obvious opposition to, and violation of, all natural rules and tendencies. Get rid of the Chinese system of training them, and you may dress every one of them fit for a queen's ball, and be thanked.

At the top of the stand stood twenty-four fine sorts of Pompones, which require no dressing, except a shift now and then, to keep them going. Here they are:—*Bob*, *Donna Alba Gonzales* (which is superior to *La Vogue*), *Aurore Borealis*, *Duruflet*, *Général Canrobert*, *Asmoids* (a wrong name), *Ida* (a fine yellow), *Requiqui*, *Madame Fould*, *Alexandre Pélée*, *Cedo Nulli*, *Hélène*, *Salomon* (a fine black), *Rose Pompon*, *Autumnnum* (not named), *Thetis*, *President*, *Model*, *Bijou de l'Horticulture*, *Mignonette*, *Brilliant*, *L'Escarboucle*, and a few common sorts.

The large dressed kinds were just such as I named last year from the same growers, and I only need tell the world this time who were the most lucky of them:—For the best dressed twelve, Mr. Wortley, of Stoke Newington. Second, Mr. James, of the same place,—a fierce contest. Third, Mr. Saunders, Stanhope Street, Regent's Park. Fourth, Mr. Saunderson, Lanfield Road, Borough.

For twenty-four:—First, Mr. Wortley. Second, Mr. Saunders. Third, Mr. James. Fourth, Mr. Saunderson. Extra, Mr. Osman.

For six:—First, Mr. Saunders, Regent's Park. Second, Mr. Wortley. Third, Mr. James. Extra, G. Nicholson, Esq., Stamford Hill.

They cannot dress the bull-eyed ones, lest the eye should get hurt, and look black and suspicious; and, therefore, the single Anemones, as they call them, stood thus:—First, Mr. Wortley; second, Mr. James; and third, Mr. Williams, from the very centre of Stoke Newington. The best dresser in England, therefore, according to this trial, is Mr. Wortley; the next best is Mr. James. Hoping they will teach the art to their children and grandchildren, let us say, continued good luck to them!

There were three designs in cut flowers, to which first and second prizes were given. The first prize to Mr. James, and the second to Mr. Hodgkinson, of Sydenham, who had a model of the Crystal Palace, in flowers. Mr. James' device was on a square platform, four feet on the side, with a gilt moulding: the top was covered with damp moss, and that planted with *Lycopodium denticulatum*. Out of the centre of this platform rose a vase, a yard high, and two feet across the mouth. The pedestal

for this vase was the only thing wanting to make the device an artistic thing. The leg and body of the vase, so to speak, were covered with evergreen sprigs of Conifers, and the top was beautifully filled with cut flowers, rising to a point in the centre. From the four sides of the platform to the body of the vase were four festooned ropes of cut flowers—all Chrysanthemums; and on the four corners of the platform stood four little vases, covered and filled as the principal vase. It was a very good conception.

The Crystal Palace garden looked as well as it could do a month earlier. The beds were full on the terrace, and in fair bloom: the vases were the same. *Tropaeolum elegans* was just as good as in August; but on the eastern side of the Rose mount it was dead, and gone to a jelly: but the next bed to it there—the white *Mesembryanthemum*—was in full bloom, as good as ever. A little further to the leeward, *Ignescens superba* was very little hurt. The China Roses were in good bloom, and the Dahlias not amiss. All the woody plants and trees about the garden seemed to have ripened their annual growth much better than is usual.

The climbers in the colonnade were better than I have ever seen them, so late. The free fasters—as *Cobaea*—were loosened at top; all their support of tendrils and claspers were cut; and the long shoots were hanging down in front of the old wood to the surface of the border. This was the first time I had seen that excellent arrangement applied to winter climbers; but it is only applicable to the back of plant-houses.

Passiflora Newmanii.—Every one should have it, for its profusion of fruit, to hang on the best part of the winter. It is a seedling of the common Passion-Flower, which seeds like a weed, and the seed-pods are like golden eggs all over the plant.

The New Zealand Veronicas, the Cherry-pie, the Fuchsias, Scarlet Geraniums, and some Roses, gave just enough flowers to show the season was not quite ended for them. The *Acacia grandis*, and *affinis*, make the finest wall-climber-like plants. Both have reached the top of the wall, and both are in fine bloom-bud. *Passiflora Billotti* is also doing well on this wall. Most of the Ceanothuses do as well for the wall as these Acacias.

Inside the Crystal Palace every plant and leaf looks remarkably well, and not the slightest appearance of dust. The blue Water Lilies are yet in bloom at both ends, and the red one at the warm end. *Limnocharis*, the same. *Habrothamnus elegans* has begun to bloom for the winter. The water was alive with gold and silver fish, and the boys feeding them, as boys only can do and enjoy.

The Inkerman trophy was left standing from the previous day (the 5th of November), which was held in celebration of the battle. That trophy is, by many degrees, the most artistic work of extempore design they have yet done here. A raised oblong-square pedestal, four feet high, eighteen feet one way, and fifteen feet the other, covered on the top with dry, bent grass and scrubwood, just as Mr. Russell wrote. This was in turf, cut from some common; here and there boulders, stones, and projecting rocks; and cannons lying in all directions. In the centre of all this rose a square vase, with four figures of Victory,—one standing at each corner; and on shields between them, on the face of the base, were the arms of the Allies and the Sultan. Over this, from the centre, rose another square vase, with four other figures of Victory,—one in the centre of each side,—so as to “cut in” between and over the four at the corners below. The figure then rises, and rounds, and diminishes to a pyramidal point, in bronze imitation; and a ball on the top, with an angel pointing his right hand south-east, to Inkerman, finishes the trophy. Between the upper figures of Victory are three tablets, with the date of the battle; and the fourth tablet is inscribed with the names of those who received the Inkerman medal, and the regiments and companies to which they belonged. On the

right and left of the trophy, were hung up tablets, with the names of the three divisions of our army which fought at Inkerman, the commanders who headed them, and the regiments who supplied the men. I was pleased to see they left the Inkerman trophy, and its accompaniments, for our people to see it, as—whatever may be said for or against wars—it is but right that those of our troops who went through those hardships should be remembered by us at home.

D. BEATON.

PIT FOR FORCING, AND STOVE PLANTS.

"I expect by the end of next month to have finished a small pit for forcing,—with top and bottom heat,—and shall be very much obliged to you, if you will kindly give me some hints as to its general management; and how, at this late season, to turn it to the best advantage. My object is, to have plants in bloom during the winter, rather than forced vegetables. The pit is about twenty-four feet long, and ten feet wide, with a broad shelf in front, and a bed with bottom heat running nearly the whole length at the back.

"I have to trust to my own efforts, as my gardener knows little or nothing about its management. I am willing to buy some good stove plants, if you will direct me which will best answer my purpose. I have got some nice healthy plants of Cinerarias, *Primula sinensis*, and a few Roses in pots,—what course must I take with them, to have a succession? I also wish to have some Azaleas, Pinks, Lilies of the Valley, *Deutzia gracilis*, and *Cytisus Gardenia*.

"There is a shelf at the back of the pit for Strawberries, but I fear it is too late to do anything with them at this season."—H. H.

I HAVE read over your letter carefully, and, considering that you have a greenhouse, or something of that sort, or that you wish, besides growing a few stove plants, to force others, either for a greenhouse or window, the first thing desirable to be done, is, to divide your house or pit, either by a fixed or moveable partition, so as to make two places of it instead of one. That division may be a permanent one of glass, with a door in the pathway, or it may be formed of stout glazed calico. I recommend this in order that you may have the proper conditions for plants constantly requiring rather high temperature; and also, that in the case of the plants you wish to force you may be able to bring them on gradually, by giving more air to a certain part, even though the same amount of heating medium passes through it all. Two great errors exist with young beginners on this subject. The first is, that mere heat is sufficient to bring a plant into bloom. If heat is applied suddenly, and not by degrees, the bloom-buds will often either drop or become what is called blind, from the mere wood-buds growing on, and leave the flower-buds to perish, or remain unstarted, because the change was too sudden. For instance, suppose you kept the average heat of this pit from 60° to 65°, with a rise from sunshine, and you at once brought Rose plants or Pinks from a temperature of 40°, and placed them in such a house in the beginning of November, I would not give much for your Roses or Pinks. But, suppose that you had two divisions,—say, two lights set apart,—by merely letting in more air, you could give such plants a top temperature of 45° for a few days, then increase it to 50°, and a few degrees more at the roots, by plunging the pot; then, in ten days, you could raise it gradually to 55°, whilst the roots would be 5° or 8° more; and then, if you thought proper, you could move the plant into the division appropriated to stove plants.

The second error is, to suppose that when hardy plants are brought into bloom by an increased temperature, that they will long retain their bloom in such circumstances. As soon as the blooms open, the plants must just be gradually hardened off, until they are brought into an average temperature of 50°, or thereabouts; and this hardening process is easily effected, by making one part of your pit a sort of transition department.

These remarks are perhaps rendered more necessary

by the mixture which you seem desirous to combine. The above remarks refer to Azaleas, Deutzias, and Cytisus; but the common varieties of the latter will not stand much artificial heat above 55° without suffering, unless there is abundance of fresh air. Your nice plants of Primulas will stand 55° comfortably; but if much beyond that, without abundant air, the plants will become drawn, and the flowers of a pale colour. Therefore, they will not like being much in the hottest part of your stove. Your fine plants of Cinerarias would also be ruined in your stove forcing-house, unless kept at the cool end, with plenty of air about them. This tribe can scarcely be persuaded to thrive in our summers, unless in a cool, shady place. In a temperature of from 45° to 50°, if kept in smallish pots, they soon throw up their flower-stalks strong and healthy: it should scarcely be ever above 55° when forwarding them in the winter months, or you will have vigorous health exchanged for myriads of green fly and other evils. Therefore, a few at a time might be forwarded in your transition department, before going to the parlour, or greenhouse; but much heat will defeat your purpose.

The whole lot of Dutch bulbs would suit your purpose admirably,—Hyacinths, Tulips, Jonquils, and Narcissi. In their case, the great thing is, to pot them as soon as you can,—one Hyacinth, one Narcissus, three Tulips, and three Jonquils, in a four-inch pot, supplied with rich, sandy loam. Put them in a cool place, protected from extra wet, and secured from frost, until the pots are crammed with roots, which will generally be the case before the flower-bud has pushed much. Then plunge the pots in your transition bed: in ten days remove them to the hottest end; and when the bloom is opening move them back again, and harden by degrees. Much information on these matters will be found in previous volumes.

The Lily of the Valley should be treated something like these bulbs. Take up the roots carefully. Select those with the plumpest buds; put them into rich loam, in six-inch pots, as many buds as you can well cram, and with all the roots possible belonging to them; water well, to settle; and at once plunge the pot into your bed,—partly at first, to give the roots a temperature of 55° or so; and in a few days plunge it deeper, so as to give 65° or more; while the buds at the surface should be sufficiently exposed to keep the temperature about them not above 50°, until the pots are filled with fresh roots. Then move the pots, or increase the heat where they are to 60°, or even a little more; give plenty of water, to cause the flower-stems to elongate freely; and when the blooms begin to open nicely, again slightly lessen the temperature, by degrees.

One of the easiest things to force in winter is the *Dielytra spectabilis*; but it loses colour, and gets weak and straggling, if kept long in heat.

Keeping in view that winter flowers are your chief object in this wide pit, I would instance the following stove plants as likely to suit your purpose, remembering that the temperature will not be often below 60° in winter:—

CLIMBERS.—*Combretum purpureum*, or *paniculatum*.—Place it at the warmest end. When necessary, shift into turfy peat and loam. Let it be well drained, and, when large enough, placed in a large pot, in similar material, kept open with pieces of charcoal mixed with the soil, and the pot at least half plunged in the bed. When the large panicles of bloom fade, prune back, recollecting that the summer-made shoots bloom in autumn and winter. Give but little water when the plant is not growing much.

Bignonia venusta.—Treat in much the same way. It requires nearly as much heat as the Combretum, and to be well pruned back when it has done flowering.

Passiflora princeps.—Produces its blooms in clusters, and almost constantly in bloom.

Passiflora alata.—This, if pruned late in the spring, will bloom all the winter. To these I would like to add:—

Stephanotis floribunda.—Though it will not often bloom in winter, it will supply fine wreaths of its snowy, sweet blossoms in spring and summer. If the roots are kept in the warm end, the tops will do very well in what I have called the transition department. All these will ultimately require large pots,—say, 8-pots,—or a small brick pit made for each, in the bed which is heated below. If you buy small plants, you must wait until the second or third year before expecting much bloom. However planted, ultimately the free blooming will much depend on not giving the roots too much feeding ground.

The following we would treat as pot plants, in the usual way:—

Ardisia crenulata.—Grow in loam and peat. Chiefly ornamental by its free profusion of red, holly-like berries.

Begonia fuchsoides.—This does best when young plants are struck early in the spring, and grown on freely during the summer. Water should be curtailed in autumn, with full exposure to the sun, which will cause a profusion of buds during the winter.

Begonia albo-coccinea.—A low-growing, beautiful thing; but it must be carefully grown on, without any lopping or curtailing. Soil should be extra well drained, and consist of small nodules of fibry loam, but chiefly of fibry peat, lightened with silver sand and pieces of charcoal.

Begonia manicata.—Free growing, with small, pink flowers, produced in great abundance. Loam and peat. It does not like much pruning. When a plant gets too large, it is better to cut it to pieces, and to strike two or three young ones.

Begonia rex, and many other new ones, are chiefly distinguished for their fine variegated foliage.

Bletia Shepherdii, and *hyacinthinum*.—Pretty ground Orchids. The first rosy-purple, blooming in the beginning of winter; the other purple, blooming early in spring. They require but little care, growing freely in open peat and loam. A fair amount of water is necessary when growing and blooming, and but very little after the leaves fade, until the flower-shoots begin to show again.

Centradenia rosea.—A neat little bush. When done flowering, prune it slightly, and grow in loam and peat.

Dichorisandra thyrsiflora.—A beautiful winter, blue-flowering plant. When in bloom, remove to the coolest end; when done flowering, prune back pretty freely; when breaking afresh, shift into a larger pot, if it requires it. Encourage as many shoots of equal size as there are room for, as from the points of these the flowers are produced. Lessen water in autumn, until the flowers show. Sandy loam and peat suit it.

Euphorbia jacquiniflora.—This grows best in about equal portions of peat, loam, nodules of dried cowdung, and rough lime-rubbish. When done flowering, stop the shoots, and bend them, to make them break freely. After the young shoots have grown a foot or two in length, give more air, full sunshine, and no more water than will keep them from flagging; more water may be given when the bloom comes freely.

Epiphyllum truncatum, and *violaceum*.—Grow in loam, peat, cowdung, and lime rubbish. Give water pretty freely, when in bloom and growing; afterwards, from the middle of July to the middle of September, the plants may stand in a sheltered, sunny spot, out of doors. In September and October, give little water, but all the sun possible. When the buds show and swell, increase the water.

Eranthemum pulchellum, and *verrucosum*.—Each is a dwarf, herbaceous, shrubby plant, with blue flowers. Grows freely in loam and peat. When done flowering, cut it back pretty freely. If too many young shoots appear, thin them out, as upon the somewhat equal shoots the blue flowers are freely produced all the winter.

Franciscea Hopeana, and *latifolia*, &c.—Beautiful compact, sweet-scented shrubs, with blueish flowers, changing to lilac. Grow in loam and peat. Prune back pretty freely when done flowering, and regulate the young shoots, as on the well-ripened, equal, young wood the best flowers will be produced.

Gesnera zebrina.—For winter blooming, start the tubers from a cool place in June or July. Grow in loam, peat, and old and well-drained cowdung. When growing, and when in bloom, give plenty of water, but keep the sun from touching the foliage in summer. When at rest, keep dry.

Gardenia florida, *radicans*, &c.—Plants, with well-ripened wood, will throw up their bloom-buds soon after being placed in a moist heat. When done flowering, grow the plants in the same. When the young shoots are formed, give more air and direct sunshine, to ripen them. Then the plants will rejoice in a temperature of from 45° to 50°, which should be rather dry before you wish to start them into bloom.

Goldfussia isophylla.—Easily cultured. A neat bush. When done blooming, cut back freely. Regulate the young shoots, so as to have them equal all the way round, as upon them the lilac flowers are freely produced in autumn and winter.

Hippeastrums.—A fine race of Amaryllids. Keep in your transition place until the flower-buds show, and dry rather than otherwise. Then place them in heat; top-dress with rich compost; water; and when the flower-stem is opening its blooms, remove to the cooler end. So long as the leaves keep green, give water, and every encouragement. When they begin to decay, give no more water; but just allow the roots to imbibe what moisture they can from an earthen or stone floor, until the flower-buds appear again.

Manettia bicolor.—A beautiful little twiner, with scarlet and yellow flowers. Does best round a trellis, or on a twiggy branch of a tree. Peat and loam, well drained.

Oldenlandia Deppiana.—A low-growing plant, furnished at all times, but especially in winter, with its small white flowers. Well-drained peat and loam suit it.

Poinsettia pulcherrima.—Peat and loam, with a little old cowdung and lime rubbish. When done flowering, cut it back freely; and encourage a number of shoots of equal size to grow, as it is not so much the flowers at the points, as the large crimson bracts below the flowers, that are the great attraction. When you prune back, let the plants be dryish, and the cuts will not bleed so much. When the young shoots are eighteen inches long or so, begin to expose more fully to the sun and air. By the end of September, give no more water than will just keep the plants from flagging; but increase it when the flower-buds begin to appear.

Ruellia formosa.—A low-growing, herbaceous-like plant, with scarlet Salvia-like flowers. Cut back freely when done flowering, as middle-sized young shoots bloom most freely. Loam and peat.

Rhynchospermum jasminoides.—Blooms early in spring, flowers small, sweet, and cloudy white. Will do well on a trellis, or even on a rafter, at the coolest end. Loam and peat.

Siphocampylos macrostemma.—Flowers crimson scarlet, produced freely on the young shoots. Loam and peat. Treat much as Ruellia.

Tradescantia discolor.—More distinguished for its crimson foliage than its singular blossoms; of easy culture. When the stem gets long, it is best to cut it over, above the surface of the pot, or a little below it, and pot it afresh, so as to keep the leaves close to the surface of the pot. In so doing, use a small pot, until it is filled with fresh roots, and then repot.

Zygopetalum crinitum, *Mackayi*, &c.—Beautiful ground Orchids, with large blueish-lilac spotted flowers. Grow in peat, loam, pieces of charcoal, and rotten wood. Give water rather liberally when in bloom, and as long as the leaves remain green; when they begin to get discoloured, give little water; and when faded, just keep the soil from being thoroughly dry. When the flower-stalks and leaves appear, top-dress, and give more water.

NOTE.—When peat is mentioned above, it is not such boggy stuff as is used for fuel, but the top spit of sandy and decomposed vegetable matter on high grounds, where the Heath grows naturally. This will be quite sweet and fibry, from free exposure to air and freedom from stagnant water. The other will be quite the reverse,—sour and unfit for almost every plant under cultivation. Again, in speaking of compost, such as loam, peat, &c., it is understood that there will be a preponderance of the first named. For instance, say a plant likes loam and peat, there will be more loam than peat used. Peat and loam, on the other hand, means a preponderance of peat. Most plants, as they get established, may have the loam increased gradually. Again, in watering, let the water be always a little warmer than the soil. All plants when growing require a moist atmosphere: this you can easily supply by syringing, damping the bed, and damping the pathway. The colder the weather, and the stronger the fires, the more need for attention to this. Plants in bloom will keep longer if the atmosphere is not so much saturated with moisture. Here, again, will be an opportunity of arranging your plants into groups according to their requirements. Plants growing freely do not require such large quantities of air; but, unless in very severe

weather in winter, air should be given so as to change the atmosphere of the house every day. Give it in the warmest part of the day, and so systematically, that no great draught of cool air will strike upon a tender, free-growing plant. A small opening at the highest point, and a good dash of sunshine, will soon make all right. In dull, gloomy weather, fresh air is most necessary to keep the plants from drawing.

You have lately seen a great deal about Strawberries. Our practice leads us to the conclusion, that, to have them plentiful and early, the plants must be prepared early, and be brought on very gradually. A great authority showed how Strawberries could be gathered in June without all this bother, and that we do not controvert, only adding that March is not June. After the flower-buds of Strawberries are showing strong, they may be placed in a temperature of 60° at once, without injuring them, provided the plants have plenty of fresh air when in bloom. Were I to take up plants, or even place prepared plants at once into a temperature of from 60° to 65°, at Christmas, or earlier, I should expect to get comparatively little fruit. In your case, if you waited until about March, or April, when the flower-trusses begin to show naturally, you might place the plants on the back shelf of your stove, and contrive to give more air there than usual. If you wished your fruit earlier, and in succession,—say, putting some in in the middle of December, January, and so on,—then I would advise placing them in the cold shut-off end, and not to give more heat than from 50° to 55° at night, until the flower-buds appeared, and were breaking into bloom; then you might increase the temperature there, or move them to a hotter place. They will stand a good heat when swelling.

R. FISH.

HEADINGTON HILL.

THE SEAT OF JAMES MORELL, ESQ.

This fine, extensive, new residence is situated on a commanding eminence, just one mile from the ancient city of Oxford. The mansion is a noble building, of the Italian Villa character, with a portico of exceedingly chaste beauty, and a colonnade, on the garden front, of considerable extent. I do not pretend to understand architecture, but I know this much, that I can judge the effect that a handsome residence has on my eye. This new mansion pleased me very much, perhaps more than any one I have seen in my long travels. The only point I could find fault with, was the breadth of the terrace on the garden front. It should have been carried out at least twenty feet further.

The grounds have been laid out by Mr. Baxter, of Oxford, and, in my opinion, do him great credit. The ground originally was a steepish slope; consequently, in order to get a platform for the house, it was necessary to excavate considerably into the side of the hill. This has been done, and a level flower garden, with a steep bank to the back, covered nicely with Laurels has been effected. There are two entrances, and two handsome convenient lodges. The carriage-drive next the city wends gradually up the hill, and is carried to the back of the mansion, where the principal entrance is situated. The carriage-drive from the upper lodge is carried down, and meets the lower drive very conveniently.

On the top of the hill there is a very broad, gravelled terrace-walk, in which there are many groups of old trees, which the landscape gardener happily spared, and gravelled around them; for under such large trees neither turf nor shrubs grow well. In hot weather, this elevated and shaded walk must be very delightful. The views from the house, and from various parts of the grounds, especially from this high-terrace walk, are very extensive and beautiful. In front are seen many of the splendid colleges of this ancient seat of learning. The foreground is composed of old trees, which completely hide the inferior buildings. To the right, the fine woods of Nuneham form a pleasing object; and to the left, the Cumnor Hills, near which is situated Cumnor Hall, where Sir Walter Scott laid the scene of the imprisonment of Amy Robsart, in his splendid fiction of "Kenilworth." Kidlington and Cassington church spires are seen also in the distance. Indeed, there are few places in the kingdom where more objects of interest are visible.

The shrubberies are planted with large specimens, brought there at a great expense, and most of them appear to be growing and thriving well. There is a considerable space planted as a Pinetum. I noticed three or four large-sized specimens of *Wellingtonia gigantea*, which have stood the weather well. I can say, and truly, that this magnificent Californian Cedar is perfectly hardy. I have seen it in high, in low, in warm, and in cold situations, and in all it was

in fine health. It is much hardier than the *Cryptomeria Japonica*, or the *Taxodium sempervirens*, or even the *Araucaria imbricata*. In some future generations, I have no doubt our descendants will see entire woods of it, and avenues planted to a great extent. The shrubberies, pleasure grounds, and flower gardens, cover an extent of twenty acres: and all this has been effected in little over three years, showing what wealth, skill, and labour can accomplish in so short a space of time.

The kitchen gardens are situated beyond the high road, and are of considerable extent, covering, I was informed, nearly six acres. There are four vineyards, a long peach-house, a camellia-house, a span-roofed plant-house, a geranium-house, a cucumber and melon-house, three ranges, each fifty feet long, devoted to the culture of the Pine Apple, and innumerable pits and frames for other useful purposes. Besides all these, I noticed a large mushroom-house, fruit-rooms, offices, potting sheds, &c. Mr. Ward, the intelligent and clever gardener, pointed out to me his mode of giving air to his forcing-houses and pits, which, I think, is on a right principle: in summer, he can give air plentifully, direct from the external atmosphere; but, in cold, windy weather, he gives air by underground air-drains. To soften the air, the apertures in the walls are covered inside with finely-pierced zinc plates. In the cucumber-house, I was shown an excellent sort of Cucumber, called the *Great Western*, a good bearer, the fruit averaging twenty inches long. A plant was put in, in April, 1857, and continued bearing till July, 1858. For winter, Mr. Ward uses a seedling of his own, named *Ward's Improved Sion House*. It seems to me to be a hybrid between *Sion House* and the *Manchester Prize*. Be that as it may, it is a most excellent variety. A young plantation of this sort was just coming into bearing. The Pine Apple plants were very healthy, and producing some good fruit.

In the kitchen garden, the first thing I noticed, was the walks. These are made of such a width that the owner and his lady can drive round the garden if they choose, and see the fruits and vegetables with ease and comfort. The centre walk is eleven feet wide, and 450 feet long. There are side walks similar in width and length, besides cross walks, so that a drive of some considerable length may be enjoyed. I fear many gardeners would be horrified at the idea of a carriage and pair driven round their sanctum of a kitchen garden.

In the matter of arrangement of crops, the garden is divided into four large compartments. In these the main heavy crops—such as Peas, early Potatoes, Onions, Celery, &c.—are grown. The rotation system is practised to a great extent. In the borders, I noticed long rows of salading,—such as Lettuce and Endive. These long rows were really very ornamental. I also noted what appeared to me a new kind of Cabbage, or Colewort. It is named the *Rosette*, and certainly a rosette Cabbage it is. Every garden ought to have this most excellent variety in it. It is, as its name imports, a close, compact variety. For market-gardeners, I think it will be found most valuable.

Mr. Ward intends to have an immense quantity of Strawberries next year. I believe he has provided upwards of 1,400 pots, and nice stocky plants they are. One lot is of the *Hautbois* variety. This, he says, is good for forcing purposes.

There is a long slip of ground outside the garden walls, devoted entirely to bush fruit,—such as Gooseberries, Currants, and Raspberries. This is better, I think, than having them in long rows by the sides of the walks in the main kitchen garden.

After looking round these matters outside, we turned into the vineyards. In three of the houses, the Vines have grown remarkably strong. One vineyard was just finished, and the borders not yet made. I judge they are rather too deep; but so much depends on the subsoil, drainage, and material of which the borders are made, that I may be mistaken.

The peach-house is already well furnished with fruit-bearing trees. Mr. Ward showed me a fine tree of the famous *Stanwick Nectarine*, which he assured me had borne three or four dozen of large, excellent fruit. I was glad to hear this, because the variety was given to that excellent institution the Gardeners' Benevolent, and I trust every grower will so manage it as to have the same successful result.

The last thing I have space to notice is Thomson's boiler: there is one here, and it appears to answer admirably. It may be described as consisting of three strong pipes, placed triangularly, with the fire carried all round. Upon the whole, as far I could judge, it is a good one.

In plants, this garden is as yet in its infancy; though I saw some good Heaths, Azaleas, Camellias, and New Holland plants. For stove plants, there is no proper house yet.

In two or three years time, this will be as fine an example of gardening as any in the country. Indeed, it ought to be, for the liberal-minded owner has spared no expense, as this brief account will show.

T. APPLEBY.

FORCING PREPARATIONS.

THE time has at length arrived when those who would force successfully must "put their house in order;" and, indeed, whether houses, pits, or other structures, they require a thorough revision. This subject deserves a full consideration, and I may observe, that it involves separate considerations,—viz., examining and cleansing the interior and heating materials; the pruning, cleansing, and dressing of fruit trees; the protection of fruits—in pots, tubs, &c.—intended for forcing; and the securing protective materials. Before I proceed, let me observe, that there can be little hope of complete success without thorough cleanliness: forcing-houses should be made as clean and as sweet as a dairy.

Therefore, the interior of all such structures must be thoroughly examined. The first thing to be thought about, is, whether any alterations, or re-arrangements of the interior be requisite, and whether any painting has to be performed. If such be the case, it should be done as early as may be, in order that the foul smell may be got rid of as soon as possible. But painting is a thing to be avoided: it should be done earlier. Whatever alterations may be deemed necessary, there must be a thorough cleansing in all parts. Water, I need scarcely hint, is the article that is most wanted. Then there is the whitewashing, &c., all of which must be seen to. In whitewashing, it is necessary to add as much sulphur as the lime will carry: this is a valuable adjunct to other means, in averting the ravages of the red spider, and the much-dreaded Vine fungus. Next in order comes the examination of the heating apparatus, whether pipes or flues. The boilers also should be well understood; if any suspicion exists, they should be examined by a competent person. As for pipes, they sometimes require scouring out, but these things should be duly reported on.

My second suggestion is, the pruning, cleansing, and dressing of fruit-trees. All pruning should be done the moment the leaves have fallen, whatever be the period at which they are required to be forced. To go into detail about pruning in general would occupy too much space. But I must say a little more about cleansing and dressing. The object of all dressings is twofold,—to destroy whatever insects, or eggs, may exist, and to avert their attacks in future. There are several practices extant as to the kinds of dressing to be used; but I would have it borne in mind, that soft soap and sulphur are the two principal things on which the gardening world at present depends—that is to say, as to power. But in many cases it becomes requisite to use some thickening medium, to form a body of some endurance on the wood; and for this purpose such things as lime, clay, cow-dung, &c., are used. I will, therefore, merely offer an universal recipe, which, although it may not suit every case in gardening, is yet of service in nine cases out of ten.

It is this—one gallon of water, in which four ounces of soft soap are well dissolved; add then as much sulphur as it will carry; and finally thicken with clay to a regular paint. This mixture may be applied to any fruit tree in a rest condition, but not to living foliage. The stems should be thoroughly painted with this mixture, not leaving a crevice untouched. In the case of Vines, the loose bark must be stripped away as clean as possible, before applying the paint. This is a most indispensable procedure, for this extraneous bark is of no real use to the tree, which, indeed, in a state of high health, seems to make an effort to cast it off. The stem enlarges, and, like a fast-growing youth, the same coat no longer fits, and, in attempts to wear it, the seams, or other parts, give way. Vines should have a second dressing, if possible, for too much care cannot be taken to avoid the ravages of the fungus.

Peaches, too, may receive this dressing twice; at least, such is my practice, or was, last January; and I can only say, that I never before saw a house of Peaches and Nectarines go through the whole season—until the fall of the leaf—without an insect. A finer house of Peaches and Nectarines could not be in the kingdom. Figs, too, will do with this dressing; and, of course, in orchard-houses, fruits in pots equally need it.

We may now come to the protection of fruit trees in pots or tubs. With many it is a practice to leave some of these things above ground through the winter, than which no practice can

be worse, for it is perfectly unnatural. There are some hard-faced things which may be thus handled, to be sure. A man may throw a Rhubarb, a Sea-kale, or a Jerusalem Artichoke root on the ground in November, and plant it in the following February, and the plant succeed. But this will not do with Vines, Peaches, Strawberries, &c. They must be plunged quite up to the rim of the pot or tub. How many complaints do we hear of the blindness of Strawberries, in part owing—in some cases—to the wholesale destruction of the roots by the frost. Besides all these precautions, we have yet another point for consideration—the securing proper protective materials for pits, frames, &c. These are of various kinds. Some use shelters, some straw mats, and, indeed, various other inventions; but, after all, I think we cannot yet supersede the old Russian mat. Whatever the kind may be, a proper provision should be made in time, that we be not taken by surprise. There are many things forced in pits or frames, which demand roof protection, especially where dependent on fermenting materials.

For my part, after trying various things during many years, in many cases I feel obliged to have recourse to mats and dry straw. It is a well-known fact, that any cover touching the glass itself becomes a conductor; but place it hollow, and it possesses a much greater efficacy. I know this in my own person: I am constantly liable to rheumatism in the knee joints, more or less. Now, when in bed, if the sheet touch a knee when in ill-humour, aching is the immediate consequence; and why? because the sheet robs the knee joint of warmth, the blanket robs the sheet, the coverlid robs the blanket, and the cold air robs the coverlid. And thus we may see what a constant pillage is going on.

Now, in covering pits with mats and straw, if we put the mats first, in close contact, I do not think we do wisely. Rather first put on lightly plenty of mere dry straw, and then press all with mats.

People very frequently are puzzled with the idea of conducting and non-conducting powers, but they are very simple. The main business, first, with pits and frames, is, to prevent a too sudden loss of that interior warmth which has been previously accumulating. This is what they term arresting radiation. At the same time it must be admitted, that covering materials—in the case of cutting winds—certainly avert that refrigerating action, which winds are known to exercise, by passing over bodies warmer than themselves. Dryness is a great essential, and, although we cannot dry mats when we choose, we can continue to renew the straw when it becomes much draggled. I had almost forgotten to suggest, that all glass should be kept clean.

R. EERRINGTON.

IPOMÆA CÆRULEA.

THE following statement may, perhaps, be interesting to some of the readers of THE COTTAGE GARDENER:—Mr. Glover, of Smedley, Manchester, has an *Ipomœa cærulea* (which grows in one of his fern-houses), that has produced, during the past season, 13,000 blooms. Strange to say, these blooms were weighed, the weight of them being 25 lbs. Now, this said plant must have received a deal of nourishment from some quarter or other. It clearly proves Mr. Beaton's assertion in last week's COTTAGE GARDENER, which was, that any vigorous climber must exhaust the soil in a bed in the course of about three years. The above statement respecting the *Ipomœa* I had from Mr. Glover. It was a splendid sight to see the blooms as they came forth.—SAMUEL TATTERSALL.

RUSTIC WORK.

I SEE that one of your correspondents is inquiring about rustic work. I, therefore, beg to send you a plan of making rustic vases, as I made a few about twelve months ago. As most of our florist friends are, no doubt, in the habit of getting their groceries from one place, I advise them to go to their grocer, and get him to give them a small butter-tub; when got, saw it in halves, or according to the exact depth they would like the vase; after which, go to the Oak-yard with a saw, cut some tolerably straight sticks, without bark, one inch or more in diameter: but do not forget a pillar of three inches in diameter. I give 2s. per cwt. for the Oak.

Nail the sticks close together all round the vase, in whatever form may suit the caprice of the individual. Make holes at the bottom for drainage, by boring with a red-hot poker; after which, nail the vase to the top of the pillar, being sure to make it firm.

Paint over with oak varnish, thinned with a little turpentine. If nicely done, it will not disgrace the Crystal Palace.

For a finish, I nailed a few crooked sticks round the top, which appear like handles, and round the rim a piece of strong rope.—
SAMUEL TATTESSALL.

WATERPROOF CEMENT FOR AQUARIUM.

I HAVE been making an aquarium,—plate-glass front and back and slate ends and bottoms,—and was very much puzzled to get it water-tight. Here is the recipe for a cement that is waterproof, and will stand either heat or cold:—One part, gutta percha; two parts, pitch; simmered in a ladle, and well stirred. When hot, pour it in the joint, and let it cool gradually. When cold, it is tight.—ROSEA.

PLANTS FOR RIBBON-BEDS.

PERHAPS you will allow me space in your paper to recommend two varieties of new annuals,—when I say new, I mean sorts not yet generally grown,—which I have found to do admirably with me this season. The first is the *Nycerinia selaginoides*. I sow it in March, in shallow boxes, using a light, fine soil, sandy loam, and peat earth, with a portion of sand added; I cover very slightly with fine sand and peat soil, press firm with a board, and place the boxes in a mild hotbed, or warm pit, near the glass. When about an inch high, I harden the seedlings off, by placing the boxes in a cold frame, or in some sheltered place out of doors, if free from frost. When well hardened, they may be transplanted, to form small beds, or ribbon-row edgings, for which they answer admirably, not growing taller than a dwarf Verbena, and of the same habit, being prostrate on the ground. I plant them thickish in the row (six inches apart) to form a mass. I draw a slight furrow, fill that with fine soil previous to planting, and water every evening, or rather afternoon, for a few days, till they take root. They will amply repay, by flowering in profusion for a long period: they bloom on successively for a long time, just after the style of a Veronica; and when the air is condensed they throw off an agreeable odour.

The other plant is the *Veronica Syriaca*, sent out, in 1857, by Messrs. Henderson, of Wellington Road. I have heard some remark that it is not worth growing. I differ widely from them, for I consider it a very advantageous annual, of neat habit, and perfectly hardy. For an early spring or summer annual, to last a long period in bloom, I think it will exceed any annual grown, by sowing it about the last week in August, either where it is intended to remain, or by sowing it on a light soil on a border, from where it could be removed, and transplanted advantageously to form ribbon-rows, or beds, after the autumn flowers are removed. I have a great quantity of it now, an inch high, planted about seven inches from the edges of my walks. It comes into bloom earlier than any other annual. In spring, it begins to bloom when very small,—about the end of March, if mild,—and continues on for upwards of three months. A single row has not the good appearance which a row has with two or three others side by side, six inches apart, which is both more conspicuous and more telling. I grow the single row occasionally, along the walk edgings, just as if it claimed no portion of room; for summer bedding, I am enabled to plant that close: it does not interfere—a single row not spreading far. However, I allow the party to judge for himself; only I am convinced that a double or triple row joined as one, with all properties considered, will far surpass even the first-class *Nemophila insignis*: it will last double the time in bloom, and have six or eight flowers at every joint, for every one on the Nemophila; and, in a mass, will, at a distance, look equally as showy, and, when approached, will be more interesting.—WM. MELVILLE.

GYNERIUM ARGENTEUM.

WITH reference to the article on "*Gynnerium argenteum*," at page 24, Vol. XX., of THE COTTAGE GARDENER, F. W. S. wishes to state, that he has two plants rather over two years old, in bloom for the second season, respectively containing sixty-two and fifty-eight spikes of blossom, and averaging ten feet in height.

These plants have been for the last two months the admiration of every visitor to the garden, and, unless damaged by heavy rains and wind, will remain in beauty some time longer.

The management of the plants has precisely corresponded with

that described as so successful by "F. B." with the addition of frequent copious waterings from the garden pond.

It is surprising that so beautiful a plant as *Gynnerium argenteum* should be, comparatively speaking, so rarely cultivated. F. W. S. is not aware of any specimens besides his own in this immediate neighbourhood, though fine plants are to be procured at the Woodbridge Nursery.—*Melton*.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 88.)

[D. signifies that varieties so marked are to be used only for the dessert; K., for kitchen purposes; and C., for cider-making. Those marked K.D. are applicable either to kitchen or dessert use.]

APPLES.

RED-STREAK, c.K. (*Scudamore's Crab*).—Medium sized, roundish. Skin deep yellow, and streaked all over with red. Eye small. Stalk short and slender. Flesh firm, crisp, and rather dry.

REINETTE BLANCHE D'ESPAGNE, K.D. (*Cobbett's Fall Pippin, Fall Pippin*).—Large, roundish, oblong, angular, with broad ribs; apex nearly as broad as the base. Skin yellowish green in the shade; orange, tinged with red, next the sun; dotted with black. Stalk half an inch long, set in a small cavity. Eye large, open, deeply sunk in an irregular basin. Flesh yellowish white, crisp, tender, and sugary. One of the largest apples, and of excellent quality. November to March.

REINETTE DU CANADA, K.D. (*Portugal Russet, St. Helena Russet*).—Large, conical, and flattened. Skin greenish yellow, brown next the sun. Stalk short, inserted in a wide hollow. Eye set in a deep, irregular basin. Flesh white, firm, and juicy. November to May.

REINETTE GRISE, D.—Medium sized, round, and compressed at both ends, rather broadest at the base. Skin yellowish green in the shade; dull orange, tinged with red, next the sun; covered with grey russet. Eye small, set in a rather shallow, narrow, and angular basin. Stalk short, inserted in a wide and deep cavity. Flesh yellowish white, firm, juicy, rich, and sugary, with a pleasant sub-acid flavour. A dessert apple of the first quality. In use from November to April.

REINETTE VAN MONS, D.—Below medium size, flattened, and almost oblate, having five rather obscure ribs, which terminate in distinct ridges round the eye. Skin greenish yellow in the shade, but with a dull and brownish-orange tinge next the sun; the whole surface has a thin coating of brown russet. Eye closed, set in a rather deep depression. Stalk half an inch long. Flesh yellowish, tender, crisp, juicy, sugary, and aromatic. December to May.

RHODE ISLAND GREENING, K.D.—Large, roundish, and compressed. Skin dark green, changing to pale green, dullish red near the stalk, which is long, curved, and thickest at the bottom. Eye small, closed, and sunk in an open cavity. Flesh yellow, tender, crisp, juicy, rich, and aromatic. November to March.

RIBSTON PIPPIN, D. (*Glory of York, Formosa Pippin, Travers' Pippin*).—Medium sized, roundish, broadest at the base, irregular. Skin greenish yellow, changing when ripe to deep yellow; mottled and streaked with red and russet next the sun. Stalk half an inch long, slender, set in a wide cavity. Eye small, closed, and sunk in an irregular basin. Flesh deep yellow, fine, crisp, sharp, and richly aromatic. The king of English dessert apples. October to May.

Rook's Nest. See *Aromatic Russet*.

ROSEMARY RUSSET, D.—Medium sized, ovate. Skin yellow, tinged with green, tinged with red on the side next the sun, and covered with thin pale brown russet. Eye small and generally closed. Stalk very long. Flesh

yellow, crisp, tender, very juicy, sugary, and highly aromatic. A first-rate dessert apple. In use from December to February.

Ross Nonpareil, D.—Medium sized, roundish, narrowing towards the eye. Skin covered with thin russet, with faint red next the sun. Stalk long, slender, and deeply inserted. Eye set in a shallow basin. Flesh greenish white, tender, and richly aromatic. November to April.

ROUND WINTER NONESUCH, K.—Large, roundish, and depressed. Skin lively green, almost entirely covered with broken streaks and patches of fine deep red, and thickly strewed with russety dots; in some specimens the colour extends almost entirely round the fruit in long, broad patches. Eye large, closed, and prominently set on the surface. Stalk short, deeply inserted in a funnel-shaped cavity. Flesh yellowish, firm, crisp, juicy, and slightly acid. A first-rate kitchen apple. In use from November to February.

ROYAL PEARMAIN, K.D. (Herefordshire Pearmain).—Rather large, oblong, and slightly angular. Skin yellowish green in the shade, and marked with russety specks, tinged with dull red next the sun, and sometimes with a few stripes of red. Eye small and open, set in a small, shallow basin. Stalk short, deeply inserted. Flesh yellowish, firm, crisp, juicy, and particularly rich and aromatic. In season from November to March.

ROYAL RUSSET, K. (Leathercoat).—Large, conical. Skin yellowish green, covered with grey russet. Stalk short. Eye small. Flesh greenish white, slightly aromatic. November to May.

Royal Somerset. See *London Pippin*.

Roxbury Russet. See *Boston Russet*.

Russetcoat Nonpareil. See *Pitmaston Nonpareil*.

Russet Golden Pippin. See *Golden Pippin*.

RUSSET TABLE PEARMAIN, D.—Below the medium size, oblong ovate. Skin very russety, with yellowish green shining out on the shaded side; and orange, with a flame of red breaking through the russet, on the side next the sun. Eye open. Stalk half an inch long. Flesh yellow, firm, sugary, rich, and juicy, with a pleasant perfume. A first-rate dessert apple. In use from November to February.

Russian. See *Court-pendu Plat*.

Russian Emperor. See *Emperor Alexander*.

RYMER, K.—Large, roundish, regularly formed, and angular. Skin pale yellow, tinged all over with delicate rose, and of a deep bright red next the sun. Eye open, placed in an irregular, angular basin, which is surrounded by several prominent knobs. Stalk short and deeply inserted. Flesh yellow, delicate, juicy, and briskly acid. One of the best culinary apples, admirably adapted for sauce, or for baking. In use from October to December. Tree healthy, vigorous, and an abundant bearer.

Sack Apple. See *Devonshire Quarrenden*.

SACK AND SUGAR, D.—Below medium size, roundish, inclining to oval, with prominent ridges round the eye. Skin pale yellow, with a few broken streaks of red. Eye large and open. Stalk short. Flesh white, very tender, and juicy, with a brisk and balsamic flavour. Early in August.

St. Helena Russet. See *Reinette du Canada*.

Sam Rawlings. See *Hoary Morning*.

SAM YOUNG, D. (Irish Russet).—Below medium size, roundish, compressed, and regular. Skin bright yellow, with grey russet, and dotted with brown spots on the yellow ground; russety red next the sun. Stalk short. Eye large and open, set in a broad basin. Flesh greenish yellow, tender, juicy, and richly flavoured. November to February.

Sam's Crab. See *Longville's Kernel*.

SCARLET NONPAREIL, D.—Medium sized, roundish, flattened, handsome, and regularly formed. Skin green,

tinged with russet; deep red, streaked with brown, next the sun. Stalk long and stout. Eye set in a regular, slightly-plaited, shallow basin. Flesh firm, yellowish white, rich, and juicy. January to March.

SCARLET PEARMAIN, D. (Bell's Scarlet, Oxford Peach).—Medium sized, conical. Skin deep red, with yellow in the shade; bright crimson next the sun. Stalk long, slender, and deeply set. Eye full and deeply sunk. Flesh white, tinged with pink, juicy, crisp, and pleasant. September to December.

SCREVENTON GOLDEN PIPPIN, D.—Larger than the old Golden Pippin, and little, if at all, inferior to it in flavour. Skin yellowish, considerably marked with russet. Flesh yellow, and more tender than the old Golden Pippin. December to April.

Scudamore's Crab. See *Red-Streak*.

Shepherd's Seedling. See *Alfriston*.

SOMERSET LASTING, K.—Large, oblate, and irregular on the sides. Skin pale yellow, streaked and dotted with a little bright crimson. Eye large and open. Stalk short. Flesh yellowish, tender, crisp, with a rough acid. October to February.

SOPS IN WINE, D.—Small, globular, narrow towards the eye. Skin crimson in the shade, stained and striped with purplish crimson next the sun; covered with white bloom. Stalk long and slender. Eye open, set in a shallow basin. Flesh white, stained with pink, firm, crisp, and juicy. October to February.

(To be continued.)

MEETING OF THE BRITISH POMOLOGICAL SOCIETY.

A MEETING of the BRITISH POMOLOGICAL SOCIETY was held on Thursday, October 28th, at St. James's Hall, ROBERT HOGG, Esq., Vice-President, in the chair.

The following gentlemen were elected ordinary members:—J. B. HAIG, Esq., 14, Chapel Street, Belgrave Square; Rev. J. FOLEY, Wadhurst, Sussex; Rev. H. S. MATTHEWS, Bentworth, Alton, Hants; Rev. J. HUYSHE, Clysthydon Rectory, Cullompton, Hants; H. W. SWAYNE, Esq., Pier Road, Erith; Mr. E. TILEY, Nurseyman, Bath; Mr. J. NEWTON, East Lodge Gardens, Enfield Chase, Middlesex; Mr. J. WILMOT, Isleworth; Mr. ALEXANDER DANSE, Nurseryman, Fulham.

The Secretary read a letter from G. J. Graham, Esq., expressing a wish, on the part of J. B. Haig, Esq., to offer a prize of £1 for the best dish of six *Glout Morceau* Pears, to be exhibited on Thursday, December 16th, by English growers,—those of Guernsey and Jersey being excluded. The points to be size, flavour, and texture. Each dish to be accompanied by information concerning locality, &c., carefully filled up in the Society's forms. The offer was accepted, and it was ordered that the thanks of the Meeting should be expressed to Mr. Haig.

A desire expressed by H. G. Bohn, Esq., to offer a second prize of 10s., in the same class, was also received with thanks.

Uncertainty existing as to who should make it their special business to prepare the REPORTS,—the matter having a year ago been placed in the hands of Mr. Hogg, who was not always able to attend the Meetings,—it was ordered that it should in future be always done by the Secretary;—he having represented the necessity of the arrangement being made positive, that he might settle his business engagements, so as to leave his leisure to give proper and prompt attention to the matter.

It was also resolved, and ordered to be inserted in future advertisements, that—“Contributors of all fruit which will endure being packed up for twenty-four hours, whether for competition or examination, are required to send their parcels, if by public conveyance, so as to be

delivered at St. James's Hall on the previous evening; and if by hand, not later than ten o'clock on the day of Meeting; the Secretary being empowered to refuse admission, for consideration on that day of Meeting, to all fruit which is not sent in accordance with this regulation." It is believed that this request will not inconvenience any contributor, and it has become necessary in consequence of the increased, and still increasing, quantity of fruit which comes to every Meeting. It being the intention of the COUNCIL, that in future all fruit sent shall be partially examined by SUB-COMMITTEES before the Chair is taken, that the time of the Meeting may not be engrossed by needless details; and as these COMMITTEES must commence their labours not later than eleven o'clock; the Secretary should be enabled to have the greater part of the fruit unpacked, placed in dishes, and entered on the previous evening.

The Secretary reported that almost every lot of fruit sent this time had been accompanied by forms carefully filled up with the desired information, or by long descriptive letters.

A large quantity of Apples and Pears were sent for competition and examination. Many of them were, as usual, unripe, and were reserved for consideration at future Meetings. Of other fruits, the following were the most remarkable:—

PINE APPLES.

A very fine, large fruit, said to be a SEEDLING, was sent by Mr. ANDREW BATGER, of Arenley House Gardens, near Leeds, Yorkshire; but, as it was requested to be returned uncut, no notice could be taken of it, further than to mention it in connection with an expression of the impossibility of the Society taking any cognisance of anything which, when sent, is accompanied by a prohibition to test its quality.

POMEGRANATES.

A dish of this fruit—rare for the English climate—was sent by Mr. H. PULLEN, gardener to the Hon. and Rev. H. C. Cust, Cockayne Hatley, Bedford. The fruit was fine for this country, but not quite ripe. The tree is reported to be "fifty years old," but was cut down by frost in 1840 and 1841, being now, however, twenty-two feet high, and covering ten feet in width of a south wall, where it blooms and sets freely every year.

GRAPEs.

In this class, one of the most interesting exhibitions was a bunch of SNOW'S MUSCAT HAMBURGH, sent by Mr. ARTHUR HENDERSON, of the Nurseries, Edgeware Road, accompanied by the following statement:—"It was grown in a house without any fire heat, excepting on one night in the beginning of the month, when we expected a sharp frost. Excepting on this occasion, no heat has been applied, the house being kept as a common greenhouse. October 28th, 1858." The Meeting strongly expressed their satisfaction that this exhibition had been made, as it afforded conclusive evidence that the former judgment passed by the Society was not founded on a mistaken idea as to the hardiness of the variety; reports having been in circulation during the past summer implying doubts thereof, and of the sufficiency and correctness of the information concerning it to which the Society had given credence.

Messrs. JAMES VEITCH and SON, of Exeter, sent a Seedling Grape, called BIDWELL'S SEEDLING, raised some years since by J. C. Bidwell, Esq. (son of the present Mr. Bidwell), who died some three years since in Australia, and was well known in the horticultural world. The Grape had been grown on an eastern aspect, others on a south wall having produced much larger bunches and berries, which ripened a month earlier. Those exhibited were not ripe, but indicated that the variety was worthy of being asked for again.

WM. EVERARD, Esq., of King's Lynn, and Mr. TAPPENDEN, of Ashford, sent supposed SEEDLINGS, both of

which were either *Black St. Peter*, or coincided therewith too closely to be worthy of separate designation and propagation.

Mr. BOHN brought some very fair specimens, from a wall, of *Black Hamburg* Grape, which were large and well-flavoured for out-door produce.

Fruits exhibited at this Meeting for ADVERTISED PREMIUMS:—

Class A.—GENERAL DESSERT PEARS IN SEASON.

Under this head were twenty-one dishes, in fourteen varieties, by eight growers:—

MARIE LOUISE was sent by Mr. WIGHTON, from a south wall and espalier. Both lots were much over-ripe, and considerably bruised; but of the fruits which were eatable, those from the wall were much the best, being very sugary, but not nicely melting; those from the espalier were watery, and harsh in texture.—By Mr. WEBSTER, of Castle Gordon. Very large; colour high, and well mingled with russet. Considered, in *appearance*, the best dish exhibited. The flesh was nicely melting, but the flavour was entirely spoilt, apparently from the fruit having lain upon straw after it was gathered, as the Secretary reported they had been carefully and properly packed.—By Mr. VALLANCE, the Gardens, Farleigh Castle, near Bath. In nice condition; colour pale; texture buttery, but rather gritty. Not quite equal in flavour to Mr. Wighton's best.—By Mr. TILEY, of Bath. Large, and in fine condition; nice flavour, sugary, and very melting. These, after repeated trials and comparisons, were pronounced the best in the room, and were awarded the first prize of £1.

NAPOLEON was sent by Mr. WIGHTON. Very ripe, sugary, but not highly flavoured; rather coarse and gritty in texture.

DUCHESSE D'ANGOULEME was sent by Mr. WIGHTON and Mr. TILEY. Both large and sugary, but breaking; coarse and gritty in flesh.

BEURRE BOSC was sent by Mr. WIGHTON. Very sweet and juicy, but crisp and breaking; not melting in texture.

BEURRE DE CAPIAUMONT was sent by Mr. COLE, gardener to Mrs. Silver, Abbey Road, St. John's Wood. Small, rough in texture, and over ripe.—By Mr. WIGHTON, from a south wall. Medium sized and highly coloured; very juicy, nearly melting; rich sugary flavour, with a fine aroma. It was considered the best example of this variety which had come before the Society this season.

SUFFOLK THORN was sent by Mr. MOULD, gardener to Philip Rose, Esq., Rayner's House, near High Wycombe. This is an excellent variety, resembling, in many particulars, *Gansel's Bergamot*, from which it was raised; but being much hardier, later, and free from the grittiness, which is not uncommonly a defect in the parent. The examples laid before the Meeting by Mr. Mould were very fine, juicy, buttery, and melting, with a fine rich flavour, and powerful aroma. They were awarded the second prize of 10s.

CHAUMONTEL was sent by Mr. SWINERD, gardener at Minster Abbey, in the Isle of Thanet, from wall and stand ard trees. The latter large and oblate, melting, and very juicy, but with no flavour; the former were smaller, more pyriform, high coloured, and more crisp in texture; but exceedingly sweet and juicy, with a good nutty flavour.

LOUISE BONNE OF JERSEY was sent by Mr. WEBSTER, Gordon Castle. Fine in appearance, and melting; but having a musty, straw-like flavour.

BROWN BEURRE was sent by Mr. VALLANCE. Very round in shape, melting, and buttery in texture; but astringent and woody in flavour.

SECKEL was sent by Mr. COLE, of St. John's Wood. Remarkable for having preserved their flavour, although the fruit was very much decayed.

BELLE DE FLANDRES was sent by Mr. TROW, gardener to Lady Charlotte Wolfe, Forenaughts, near Naas, Ireland, under the name of *Beurre d'Aremberg*. This was a

very noble dish in appearance,—the fruit being large, handsome, and very highly coloured. All the specimens were decayed at heart, save one, which was sweet and juicy. This is not a Pear of high quality; but very ornamental for a large dessert.

FONDANTE D'AUTOMNE was sent by Mr. MOULD, also under the name of *Beurré d'Aremberg*. Very melting and juicy, with a fine aroma, and rich sugary flavour.

SUCRE VERT was sent by Mr. WIGHTON. A small Pear, resembling *Aston Town* in shape and size, but greener in colour. Of no value. Crisp, dry, and flavourless.

A remarkable Pear was sent, erroneously under the name of *Crassane*, by Mr. SWINERD. It was large, in form between *Duchesse d'Angoulême* and *Beurré d'Aremberg*, remarkably juicy and melting in texture, but with a sharp acid flavour. The variety was not recognised.

Class B.—DESSERT PEARS SENT FOR EXAMINATION.

Mr. RIVERS, of Sawbridgeworth, sent *Callebasse Grosse*, in fine condition, juicy, and melting. *Conseiller de la Cour*, though reputed to be a Pear of value, was, in the present case, dry and juiceless. *Poire Gaudry*, a small, roundish Pear, very juicy, and half melting, but not high flavoured. *Beurré Superfin*, a deliciously melting Pear, with a fine aroma, and sprightly acid; promising to be a useful variety for the end of October. *Baronne de Mello*, very juicy and melting, with a fine aroma and good flavour, although rather astringent. The latter is accidental in this variety, as it has several times stood favourably the test of examination by the Society.

Mr. LANE, of Berkhamstead, sent the following varieties of fruit grown on standards:—*Beurré Robin*, melting and good flavoured, but deficient in juiciness. *Anana's Beauté Supreme* and *Doyenné Boussoch*, not high in texture or flavour. *Comte de Lamy*, under the name of *Beurré Moire*, in fine condition, melting and very juicy, with a delicate aroma, and rich sugary flavour.

Mr. W. J. NICHOLSON, of Egglecliffe, Yorkshire, sent specimens of *Beurré Auguste Benoist*, a little known variety; fruit obtusely pyriform, about four inches long; colour ruddy russet on the sunny side, pale greenish yellow on the other; stalk short and thick; texture juicy and melting, with a nice sweet flavour, resembling that of *Beurré Hardy*.

Class C.—SEEDLING PEARS.

Mr. RIVERS sent two SEEDLINGS raised from *Perry Pears*, crossed by *Gansell's Bergamot*, by JAMES ASHWIN, Esq., of Bretforton Hall. They were reputed to be profuse bearers, and were handsome *Bergamot*-shaped fruit; one marked with blue having also a flavour somewhat approaching the *Autumn Bergamot*. They were, however, of no value for dessert purposes; and in regard to their qualities as perry Pears, the Meeting was, of course, unable to speak, unless samples of the beverage produced from them had accompanied the specimens.

Mr. GIRDWOOD's No. 3 SEEDLING was ripe enough for examination on this occasion. It was very juicy, and half melting, but not possessing (as exhibited) sufficient flavour to warrant its being recommended for cultivation, even in the north.

Mr. FERME, of Haddington, sent a SEEDLING, which, though rather mealy and gritty, possessed some qualities which rendered it—in the estimation of the Meeting—worthy of being cultivated in northern latitudes. A desire was expressed that it should be sent again next year.

Mr. CURTIS, of Ashburton, Devon, sent specimens of a Seedling, called *ASHBURTON BEURRE*, said to have been raised forty years ago. The fruit was described as being from a west wall, completely shaded by trees. Soil clay slate; foliage and habit resembling *Glout Morceau*. The fruit was large, and so closely resembling *Brown Beurre*, in every point, as to be evidently a Seedling from that kind, and only likely to be useful if later or hardier than its parent.

Class D.—DESSERT APPLES, IN DISHES OF SIX.

A large and interesting collection of these fruits was exhibited, but most of them were sufficiently unripe to admit of being kept till the next Meeting, when prizes are offered for them. The most remarkable were:—

GOLDEN WINTER PEARMAIN, under the name of *King of the Pippins*, from Mr. Webster, of Gordon Castle. This variety is often so called, but is very distinct from the true *King of the Pippins*, or *Hampshire Yellow*. The latter is generally bright yellow, though sometimes streaked with red, but very smooth and clear in skin, conoid in shape, regular and even about the eye; the former is very obtusely conoid, almost fluted, the flutings terminating in five distinct and considerably raised knobs round the eye; colour greenish yellow, with a warm russet tinge.

KING OF THE PIPPINS (true), were sent by Messrs. SWINERD, TILEY, and DOWLING (of Southampton). The latter were remarkably large and fine, more oblate, and much higher coloured than they are usually seen.

COX'S ORANGE PIPPIN was exhibited very fine in appearance, by Mr. GROOM, of Slough, but was not ripe enough for tasting at the present Meeting.

CORNISH GILLIFLOWER was sent by Mr. NEWTON, of Enfield Chase. Very fine specimens, and promising—from those which were tasted—to be in first-rate condition at the next Meeting.

A variety of the *Nonpareil* section, called *GRANNY GIFFORD*, was sent by Mr. SWINERD. It was a nice flavoured Apple, with a thin skin, and tender flesh. It was, however, rather dry, and somewhat shrivelled, having, apparently, suffered from too early gathering.

Of *SUMMER NONPAREIL*, two dishes were sent, in excellent condition, by Mr. SWINERD. One dish was from a very wet soil, nearly level with the marshes, and frequently under water: yet these were decidedly higher flavoured, and more juicy, than those from more elevated ground in an old loamy pasture.

Class E.—APPLES NOT SENT IN DISHES OF SIX.

Mr. WIGHTON sent, along with other interesting kinds, a variety incorrectly called *Golden Pearmain*, which was, however, more like *Blenheim*, but was not clearly ascertained. It was crisp, juicy, and pleasantly sub-acid. *Reinette du Canada*, under its synonyme of *Portugal Reinette*.

Some fine specimens of *Scarlet Nonpareil* were sent by Messrs. WIGHTON and WEBSTER.

Mr. SCLATER, of Heavitree, Devon, sent *Hutchings' Incomparable*, a medium-sized *Nonpareil*-like Apple. Colour pale russet; skin thin; texture tender, very juicy, aromatic, and with a very delicate *Nonpareil* flavour.

Mr. RIVERS sent *Mother Apple*, a medium-sized, slightly conical fruit, with a high purplish-red colour, and carrying a fine bloom. The fruit was, however, past its best, and, therefore, not in a condition to test as to its flavour.

RICHARD FRANKUM, Esq., of Brooklawn, Woolhampton, exhibited some specimens of *Blenheim* and other Apples, from very old trees growing in his grounds, part of which formerly comprised Dickson's old nursery, once famous for fruit trees, but now extinct. The Apples were remarkable for the wax-like transparency of their skins.

Class G.—SEEDLING APPLES.

Mr. J. J. FOSTER, of Edgeware Nursery, sent a Seedling, called *INCOMPARABLE PROLIFIC*, reputed to be a most profuse cropper. The fruit is small, very oblate, clear pale yellow, speckled with russet; crisp in texture, brisk acid in flavour; but not possessing any striking qualities sufficient to render it worthy of being added to the list of similar varieties.

Mr. M'LAREN, of Cardington, Bedford, sent a Seedling, which, although firm, brisk, and juicy, did not possess any merit calculated to encourage its propagation.

HENRY BOOTHBY, Esq., of Holme Cottage, near Louth, sent a SEEDLING Apple of some promise. It is reported to be a most abundant bearer, every branch being loaded with fruit all round it, like an ear of Indian Corn. The fruit had been kept some time, till it should ripen, and was, in consequence of frequent exposures, in a state not quite calculated to do it justice. In flavour, however, it was sweet, and remarkably fragrant when cut. A strong desire was expressed to see it again in a future year.

Messrs. YOUELL, of Great Yarmouth, sent a collection of twelve Seedling Apples, said to have been found growing in a wood near Stalham Hall, in Norfolk. The greater part of them were unripe, and ordered to be kept for future examination; one of them, however (No. 13), was pronounced to be *Court of Wick*.

LIST OF PLANTS BLOOMING IN OCTOBER, AT THE ROYAL GARDENS, KEW.

LAMIACEÆ.—Teucrium lucidum; Salvia confertifolia, S. Mexicana.

LEGUMINOSÆ.—Coronilla Emerus.

COMPOSITE.—Aster Novæ Angliæ, A. pulcherrimus, A. puniceus, A. lœvis; Solidago velutina; Iva fragrans; Vernonia fascicularis; Pyrethrum Chinense.

CAMPANULACEÆ.—Campanula stricta.

MYRTACEÆ.—Eugenia apiculata.

ERICACEÆ.—Arbutus unedo.

CAPRIFOLIACEÆ.—Viburnum tinus.

RHAMNACEÆ.—Ceanothus azureus.

RANUNCULACEÆ.—Aconitum autumnalis.

ASPHODELACEÆ.—Kniphofia Burchellii.

HEMEROCALLIDACEÆ.—Hemerocallis fulva.

IRIDACEÆ.—Sisyrinchium striatum.

BEE-KEEPING IN DEVON.—No. V.

FROM GRAVE TO GAY—CRITICISMS—ANTICIPATIONS—HOPES AND FEARS—THE WIDE, WIDE WORLD—CONSIDER YOUR VERDICT, GENTLEMEN—INSECT PERSEVERANCE—ANOTHER TRIP—OBLIGING FRIENDS—A SERIOUS OMISSION—BARE-FACED ATTACK—SKIRMISH—REMEDY FOR A STING—A SECOND ATTACK—VIGOROUS REPULSE—A FUGITIVE AND A HERO.

THE gloomy thoughts induced by the lamentable tragedy related in my last were completely banished the next morning, by finding, in THE COTTAGE GARDENER, an article headed "BEE-KEEPING IN DEVON.—No. I." "'Tis pleasant, sure, to see one's-self in print;" and, many years having elapsed since I enjoyed that privilege, I may be supposed to have experienced some of the exquisite emotions of a neophyte. First, I read the article carefully through, and praised the printer for the correctness with which he had deciphered my not too legible "copy." Next, I admired the beauty of the type, and felicitated myself on having hit on what I could not but consider an attractive style of heading. Then ensued a slight reaction, and I became critical: I thought the table would have looked better in "Nonpareil," * and began to fancy that a dry statement of facts and figures was but an indifferent body for so comely a head. Resolving to avoid this fault in future, I gave the reins to my imagination, and pictured to myself the time (not perhaps so very far distant), when I too, in common with another and more able correspondent, might be entitled to style myself "An old Apiarian;" when, perchance, as time advanced, BEE-KEEPING IN DEVON, or, possibly, some other locality, might require more than one C to express in numerals my oft-repeated trespasses on the patience of the readers of THE COTTAGE GARDENER; when even as years rolled on the repose of a "green old age," to which so many look forward, and so few attain, I might be slightly ruffled by a kindly hint from that ever-juvenile being, "the Editor," recommending the employment of an amanuensis, ostensibly to avoid injuring my sight, but really because the increasing infirmities of age had produced such a scrawl, as defied the ablest compositor in the office to decipher.

These pleasing day-dreams were, however, soon interrupted by

* The name of the type in which this note is printed, and a smaller size than was used on the occasion alluded to.

the recollection of the responsibilities of my new position. But yesterday I was an obscure individual, indulging my aparian predilections solely for my own amusement, and pursuing my experiments with no spectators beyond my own family, and such of my immediate friends as might be interested in either my success or failure. Now, on the other hand, I had the eyes of the world upon me. Not the world in the usual conventional acceptation of the phrase, which rarely includes any beyond those in immediate contact with us, but the actual four quarters of the globe,—Europe, Asia, Africa, and America,—not forgetting the quasi-continent of Australia. Wherever the English language is spoken, in whatever latitude the hardy Anglo-Saxon race has established itself, there, doubtless, is to be found THE COTTAGE GARDENER; and it is the multitudinous readers of this ubiquitous periodical whom I have admitted spectators of my aparian proceedings. A chill comes over me, and I tremble as I think of the awful crowd of witnesses, and possibly also of severe judges, whom my temerity has evoked.

Yes, there it stands, "BEE-KEEPING IN DEVON.—No. I." a fearful, distinct pledge that future numbers are to follow! Then at once recur, with harrowing distinctness, the terrible details of the massacre of yesterday; and I ask if it be possible for me to present myself at the solemn tribunal of public opinion, a convicted destroyer of so many thousands of innocent lives? Suddenly my courage revives, as I reply, I will indeed do so, trusting to establish my plea of "Not Guilty," by showing that my intention was to save life, not to destroy it; that my best efforts were directed to this end; and that every one of the victims must otherwise have met with an untimely death in the brimstone pit. Taking these circumstances into consideration, I venture to indulge a hope, that the "gentlemen (and ladies) of the jury," will find themselves justified in returning a verdict of "Apicide by misadventure."

Rallying, therefore, my depressed spirits, and fortifying myself by the recollection of the Bruce's spider, and the example of my own especial favourite, the bee, whose indomitable perseverance has often excited my admiration, I determined upon making yet another effort to replenish the scanty population of my two shallow eight-bar hives, and, at the same time, to secure such a body of deprived bees as might enable me to attempt, with a fair prospect of success, the experiment of preserving them through the winter.

In pursuance of this resolution, and at the usual early hour in the morning of the 2nd September last, I again found myself a passenger on the mail, and speeding towards the village, whence two days previously I had procured the ill-starred vehicle, which, by its violent jerks and oscillations, produced the fatal catastrophe to which I have adverted.

During the journey, it occurred to me that this tragical affair explained a story, which, when related on good authority some years ago, I found some difficulty in believing. It was to the effect that on one occasion a swarm of bees, having been rudely shaken during their removal to a distance, on the evening of the day on which they issued, were completely suffocated by the honey they had collected and stored during the few hours they had occupied their new domicile. The fact was, doubtless, correct, the inference only being erroneous; the fatal sweets had not all been collected and stored during the day, but were mostly the contents of the bees' stomachs, taken by them from the parent hive, and which the violent concussions had impelled them to eject.

It will be readily imagined, that the various aparian operations recounted in my former communications must have resulted in my becoming acquainted with some bee-keepers in the neighbourhood of the heath to which my hives had been removed. Having pretty well exhausted the condemned bees in my own locality, it occurred to me that I might readily obtain them on the spot; and, by so doing, avoid the risk of transporting them to a distance. Nor was I disappointed. On my arrival, a couple of stocks were immediately at my disposal, with a friendly intimation that there would probably be little difficulty in procuring as many more as I might require.

Thus far, all promised success, but what was my dismay, on untying the parcel supposed to contain the necessary apparatus, at finding that I had omitted to include my bee-dress! There were, indeed, the cloth and cord for securing the two hives together, and a thick pair of woollen gloves for protecting the hands; but, unquestionably, there was no bee-dress! I stood agast! It was the play of Hamlet with the character of Hamlet omitted!

Recovering from my consternation, I determined to say nothing

of my mishap, but, putting a bold face upon the matter, and relying on a constitutional immunity which I enjoy from the worst consequences of bee-stings, to attack the fortress with "beaver up." Drawing on my gloves, and bearing with me the necessary implements, I proceeded to the garden, followed at a respectful distance by my admiring friends. Conscious that my only chance of safety lay in taking the enemy by surprise, I conducted my operations with such rapidity, that the investment was completed before the garrison had sufficiently recovered from their astonishment to make a sortie in force. Only a small company of sharp-shooters escaped; and these, overlooking the enemy at their gates, attacked the more distant spectators with such vigour, that a loud outcry soon announced their precipitate retreat, which, however, was not effected without loss, one of their number being severely wounded in the neck.

Having completed the circumvallation, the usual result speedily followed, and I had the satisfaction of administering to the necessities of the wounded man, who, having anointed the injured part with a little honey from the now abandoned hive, appeared to derive considerable solace from the copious use of the same remedy applied internally.

Now for the second hive. I had noticed that this was a decidedly strong and vigorous colony, and I freely confess that it was not without some misgivings that I advanced to the attack. The result verified my worst anticipations: the garrison, in this case, was on the alert, and a great number escaped, who instantly commenced a terrible onslaught upon the besieger. Still the battle was not entirely lost, and the assault might probably have been successful, had not the cloth slipped; and the number of active defenders of the fortalice being instantly quadrupled, I was fain to cover my face with my hands, and make a hasty retreat, leaving both artillery and baggage in possession of the enemy, who so pressed their advantage, that the retreat was speedily converted into a rout; and, my hat becoming displaced, the now-attacking force charged right gallantly into my hair, and, shrieking their shrill war-cry in my ears, "fleshed their maiden swords" in my unprotected scalp. In far less time than it has taken to relate it, I found myself a fugitive from the "well-fought field," as well as the unenvied "hero of a hundred" stings!—A DEVONSHIRE BEE-KEEPER.

QUERIES AND ANSWERS.

PRUNING PILLAR ROSES.

"I take the liberty of referring to page 398, Vol. XVIII., where you give me instructions about pillar Roses, and desire to give you a report, with a view to further advice."

"*Félicité Perpetuelle*.—This Rose has thrown up six shoots, about seven feet long, besides several shorter and weaker ones."

"*Ruga*.—This has not grown quite so vigorously as the above, having thrown up but one vigorous shoot, with several short and weak ones."

"*Jules Margottin* and *William Griffiths*.—These have bloomed profusely, giving a good second crop of flowers; but they have not grown above a foot of new wood."

"The favour of your further advice as to pruning will be highly valued."—A NOVICE.

[Prune all these Roses at the end of February, and prune them thus:—Three of the strongest shoots, and all the weaker ones, of *Félicité Perpetuelle* cut down close to the ground, and the other three shoots down to four-feet lengths; and at the end of twelve months cut down the last three close to the ground, even if they have each made shoots fifteen feet long. Cut the whole of *Ruga* down to the ground; and do not spare the annual growths of these two, until each of them makes a growth of fifteen feet in one season; then cut that growth to five feet, and call the five feet permanent shoots. Cut the strongest shoots of *Jules Margottin* (one of the very best of our Roses), and of *W. Griffiths*, to the four lower eyes of the young wood of last summer, and all the weaker shoots to two eyes, unless they are on their own roots; if they are, leave twice the number of eyes. If you are on the north side of Derby, it would be better to prune all these Roses now, and all other Roses which are not the right thing as regards health, except the Teas, free Chinas, and Noisettes: the reason for leaving the latter unpruned is, that if the winter is mild they might make a fresh growth, which could hardly escape the cold, cutting winds and late spring frost. To make sure of

these free and fickle Roses, they should not be pruned until the beginning of April, nor until they have fairly started into growth. It is also a safe plan to cut them in pretty close, and to watch them at the end of May, when, if they are making some very strong shoots, they should be stopped when they are from six to nine inches long. It is never a good plan to allow any bush Rose to make very long shoots early in the season.]

PLANTING BULBS.

"I have several bulbs of six different Tritonias,—*viridis*, *color*, *crocata*, *lineata*, *miniata*, *rosea*. Should I put them into the open ground now? or should I wait till spring? or pot them now, and keep them to bloom in the greenhouse? In what soil, and at what distance apart, should I plant them?"—A REGULAR SUBSCRIBER.

[About London, Edinburgh, or Dublin, or any other known parts on the face of the earth which have nearly the same climate, the pretty little bulbs you mention would pay best to be grown and flowered in pots. But they ought to have been in the pots seven weeks ago, and to be now plunged, to the rim of the pots, in coal ashes in a cold pit, from which frost could be kept by a liberal covering on cold nights. No place is one quarter so good, for all the *Ixia* bulbs and their relations, as a cold pit, till they begin to throw up for bloom in the spring; then, out with them into the front shelf of a cosy greenhouse; or, if preferred, out of the pots into the border in front of some kind of house facing the south, with something to throw over them when the nights are cold.]

HOYA CARNOSA SEED.

"I have a *Hoya carnosa*, which has blossomed twice this year, and which has produced one seed-pod from the first bloom. Two or three years back, I had a dozen or more seed-pods. Will you tell me if this *Hoya* can be propagated by seed? and, if it can, whether there is any chance of a variety?"—J. FLAX.

[The seeds will grow easily enough; but there is no chance of the seedlings varying from the type; nor would there be any merit or improvement, if they did. There is no *Hoya* yet like the old *carnosa*, when grown first-rate, with a thousand clusters of flowers overhead, and a drop of honey hanging from at least 10,000 of the flowers. We did once see it so, and only once. It was planted in a rich new border, at the back of a large stove. The back wall was fifteen feet high and forty feet long, and two-thirds of all this brickwork was covered with the good, honest, old *Hoya*, and trained horizontally, as regularly as the joints of the bricks.]

INTERPRETATION OF EXHIBITION RULES.

"There is this proviso in the programme of a Chrysanthemum Show,—'Plants exhibited in pots other than those in which they are grown will be disqualified.' Now, plants in Class 3, in eight-inch pots, and having bottom holes three inches in diameter, were plunged, fed, and rooted, in a fifteen-inch pot, until the show morning, then the surplus roots were cut off. Do they come within the proviso we have in our schedule, as enclosed?"

[If the Chrysanthemums were cultivated in fifteen-inch pots until the morning of the exhibition day, and then had their roots pruned so as to enable them to be thrust into eight-inch pots, they were disqualified by the preceding proviso. But, if they were cultivated throughout their growth in eight-inch pots, though some of the roots grew through the drainage-hole, we do not think them thereby disqualified. We have seen Chrysanthemum-pots plunged in dung, so that the plants were fed by nourishment from that dung penetrating through the sides of the pots, and from the roots rambling into the dung over the tops of the pots. This would not be a disqualification either, under that proviso.]

"Class 4.—Twenty-four cut blooms, not less than twelve distinct varieties, and not more than two blooms of one variety."

"Class 5.—Twelve cut blooms, distinct varieties."

"Class 6.—Six cut blooms, distinct varieties."

"Any member exhibiting in Class 4 shall, if he also shows in Classes 5 and 6, exhibit distinct varieties in each class."

"Does the wording of the above classes mean, that if I show

Annie Salter in Class 4, I can, if I show in Class 6, have *Annie Salter* in that class also, and come within the meaning of the proviso enclosed above?" — AN IPSWICH CHRYSANTHEMUM GROWER.

[We think, under the wording of the headings of the classes, as above quoted, an exhibitor could show *Annie Salter*, both in Class 4 and Class 6; and in Class 5 also; but the proviso evidently indicates that it was intended he should not exhibit a specimen of the same variety, in two or more of Classes 4, 5, and 6. The proviso would be mere surplusage, an idle repetition of the headings of the Classes, if it were not so interpreted. To remove all doubt, the Committee had better say in future, "Any member exhibiting in Class 4 may, at the same time, exhibit in either or both of Classes 5 and 6, but among his flowers then exhibited no variety must occur more than once."]

EXPOSING MARBLE STATUES TO THE WINTER'S WEATHER.

"My reason for writing to you is simply this,—feeling a great interest in the beauty of our 'People's Park,'—which has been laid out by Sir Joseph Paxton, regardless of cost,—in which are placed a number of statues, of the preservation of which I am about to speak. Seven have been erected, one only being wanted to complete the series. These are hewn from the finest Carara marble, have come from a celebrated sculptor in Italy, and have cost some hundreds of pounds each. As Halifax is one of the highest situated towns in Yorkshire, and two hundred miles north of London, with frosts in the winter generally protracted and severe, is it your opinion that these valuable works of art should be exposed to the bitter blasts of our usually tempestuous winter? If, like myself, you think such exposure injurious, could you suggest some means of preservation by which these things of beauty may remain a source of pleasure to future generations?" —A COUNTRY SUBSCRIBER.

[The Italian marbles, and the Greek marbles from Pentelicon, will stand our English frost just as well as the Aberdeen granites; and if any one of our feudal castles was encased with marble slabs, and the joints were made of white lead,—as Sir Morton Peto has jointed the joints of the Caen-stone facing to his mansion near Lowestoff,—the whole would stand as a rock for ages.

When the French bombarded the Eternal City, ten or a dozen years back, they destroyed as much of costly marble antique statuary in the suburbs of Rome, as would, if sold to English amateurs, pay for a second Crystal Palace. We have seen quantities of that broken and bombarded Roman statuary brought to England, and patched up and mended, so as to look as well as when St. Paul was in Rome, and the whole of it has stood the frost of our climate since. But some of the more broken figures are covered, in winter, with slight wooden cases, to keep them dry, on account of the joints in mending,—not to keep them from the frost. The "wet and dry" joints might give way to frost, but if kept dry there is no fear. One of the Roman Emperors, in this collection was so badly shattered about the head, as to suggest—to the gardeners—the idea of rat-catching; and so this Emperor goes by the name of "Her Majesty's rat-catcher" to this day. But he, too, stands the frost as well as the marble vases of the Crystal Palace.]

BEES SECRETING WAX—ARTIFICIAL COMBS.

SINCE Hunter's discovery of bees secreting wax in small scales, through the segments under the abdomen, it is generally believed that they derive it from honey. This is founded on the notion that fresh swarms carry off from the stocks large supplies of honey, to enable them to commence making combs. But it is not clearly ascertained whether bees do make wax from honey. I may have already mentioned in this journal, that more probably they collect wax from plants, and refine it in their stomachs by a process impossible to explain.

Hunter certainly calls wax an "external secretion of oil;" but he was not aware that bees also eject it from their mouths: and what he says does not warrant the supposition that bees convert honey into wax, but rather that they obtain it by some sort of exudation, which may be the hidden process just noticed. However, there seems to be too much made of the quantity of honey

carried off by swarms: in these the insects are often lightly laden, and they begin to collect and store up more food as soon as the first cells are formed. At that time the bees have no brood to attend, or feed; and in good weather they will sometimes fill a hive with combs in eight or ten days, and store up a considerable quantity of honey and pollen.

I may note, that the cells of bees are of various forms, which shows that they can vary their mode of working according to circumstances. This does not accord with the supposition that the foundation of the cells are round, and take the hexagonal shape from the singular construction in the front of bees heads, which serves as a pattern for the cells. Those of wasps are also hexagonal, and the queen, who forms the first ones, can, of course, put both her head and abdomen into them. Consequently, the same mode of reasoning is applicable to the wasp. But a close observer of both insects, when they are at work, must see little or no ground for such theory.

This reminds me of the observations of a "DEVONSHIRE BEE-KEEPER" (page 10), somewhat connected with this subject. He refers to a paragraph copied by a correspondent from an American paper, concerning artificial comb-making, and says,— "I fully agree with what is there stated, respecting the large quantity of honey consumed in the production of wax, and the consequent saving in labour to the industrious insects, which would result from their being furnished with ready-made combs." After what I have stated concerning the production of wax, bees forming combs, and collection of both honey and pollen, it would be superfluous to say more upon this, than to point out the great utility of fresh swarms being furnished with good second-hand combs. However, like the before-mentioned writer, I not only consider the expense and difficulty of imitating wax combs, but also how they are to be fixed. Besides, without propolis to varnish the cells, the combs would be brittle, and crumble down by the traffic of the bees. These remarks may also be somewhat applicable to the "thin sheets of wax," which a "DEVONSHIRE BEE-KEEPER" recommends, instead of the American plan. He speaks of them, however, with some diffidence, as well he may, for it is quite contrary to the instinct of bees to hollow out cells. These are formed and completed as the workers proceed. Both plans are really curious, but the practical bee-keeper knows, that to follow either must be only playing at bees' work without any good results. In general, to his loss, he has too many true combs empty to think of making expensive imitation ones.—J. WIGHTON.

TO CORRESPONDENTS.

SCENTED VERBENAS (*Little Greenhouse*).—Our correspondent will be obliged by a list of these.

HARDY FRUITS FOR CHALK SOIL (*An Old Subscriber*).—On such a soil, and with a south aspect, in Hampshire, we have found the following thrive and bear well:—**Apples**.—Sturmer Pippin, Nonpareil, Kerry Pippin, Cockle Pippin, Ashmead's Kernel, Court of Wick, Oslin, Joanneting, and Downton Pippin. **Pears**.—Winter Nelis, Glout Moreau, Passe Colmar, Seckel, Napoléon, Forelle, and Croft Castle; but the last is tasteless. Easter Beurré among Pears, and the Red Crofton among Apples, do not seem to succeed on such a soil. Our correspondent wishes for "Catalogues of Roses, Bulbs, American Plants (these will not do on a chalky soil), &c., to be sent to him, addressed"—"Peveril, Dorchester."

MOVING YOUNG FRUIT TREES (*W. J. W.*).—Shorten this year's shoots one-third; pinch the shoots in summer; plant shallow. As the Raspberries bear well, do not prune the laterals.

PLANTING GEOMETRICAL GARDEN (*Annie*).—The centre figure, No. one, to be planted with different variegated plants; the opposite pair of fives with Scarlet Geraniums; and the other pair of fives with yellow Calceolarias. All the fours with variegated plants, with or without a small Huma in the centre of each. The threes with Petunias, of sorts, or Pentstemons, or dwarf Fuchsias, or what you have. The twos with different Verbenas. The sixes with standard Roses in the middle, and bush Roses round them, and an edging of some light plant, or variegated plant, or Hollyhocks, or fancy Dahlias, or tall Salvias, or the tallest of all your stock.

GUANO (*W. B. B.*).—Save it until next year, and then use it, during the spring and summer, to your kitchen garden crops whilst growing. Half an ounce to a gallon of water will be enough. For the Cabbageworts, Asparagus, Rhubarb, and Spinach, one ounce to a gallon might be used.

PITMASTON NONFARELL (*Clericus X.*).—The cracking of the fruit probably arises from deficiency of moisture at the roots during the summer. Try liquid manure, and mulching over a surface of three feet all round the tree. The liquid and the mulching to be applied only during the summer and autumn.

ROYAL MUSCADINE GRAPE (*A Novice*).—This will succeed in your unheated greenhouse, and so will the *Chasselas Musqué*, and the *Black Champion*.

BEEHIVE (*Queen Bee*).—Buy "Bee-keeping for the Many," published at our office; and Taylor's "Bee-keeper's Manual," published by Groom-

bridge and Sons. In them you will find many hives described, and you must choose for yourself. The flowers of the Turnip give excellent bee-pasturage.

"FERTILIZERS" (G. C.).—The price of Mr. Cuthbert Johnson's volume on "Fertilizers" is eight shillings. It is published by Ridgway, Piccadilly.

NAME OF FRUIT (A Subscriber, Great Budlow).—Your Pear is Red Doyenne.

NAMES OF FERNS (A. Z.).—1. *Scolopendrium vulgare*, or common Hart's Tongue. 2. From the young frond sent, we believe it to be *Polystichum angulare*, Soft Prickly Shield Fern. 3. *Asplenium adiantum-nigrum*, or Black Spleenwort. 4. *Polyodium vulgare*, the common Polypody. 5 is too diminutive to be certain what it may prove to be; but we should say it is a small seedling of the *Asplenium* family.

NAMES OF PLANTS (S. C. W.).—Your plant is the *Iris falcata*, or Stinking Flag, or Stinking Gladdon, or Gladwyn, an indigenous plant, frequently found in thickets and hedge banks, where its scarlet seeds, displayed by the opening capsules, make a gay appearance in the autumn months. (J. W. St. Ann).—Your portions of plants are as follows:—The light-flowered Heath is a white variety of the *Erica tetralix alba*. The other purple-flowered kind is a rarer plant. We believe this to be Mackie's Heath, *Erica Mackieana*. The third plant is the *Ledum palustre*, or Labrador Tea.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

NOVEMBER 30th and DECEMBER 1st. GLASGOW. Sec., Mr. R. M'Cowen. Entries close November 17th.

DECEMBER 7th and 8th. NORTH DURHAM. Secs., R. C. Coulson, J. T. Duncan, and T. Wetherell. Entries close November 22nd.

DECEMBER 8th. WILTSHIRE. Sec., F. W. Phillips, Devizes. Entries close November 30th.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

DECEMBER 29th and 30th. BURNLEY AND EAST LANCASHIRE. Sec., Angus Sutherland. Entries close December 10th.

JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

N.B.—Secretaries will oblige us by sending early copies of their lists.

POINTS REQUIRED IN EXHIBITION FOWLS.

It is always a satisfaction to know that painstaking is appreciated, and that we are well considered as the medium of poultry information. We are always disposed to meet the wishes of our subscribers, and, therefore, to-day, although much of this present paper must of necessity be tedious, as a thrice told tale, we print it in answer to the following:—

"To THE EDITOR.—Your paper of last week on the diet of fowls is very good; but can you not give us another, telling us what to choose, and what to avoid in selecting for exhibition. Please to do it fully, and do not refer us to some page or other in a past volume. I have been several times on the threshold of success, at Birmingham, but farther progress was prevented by some little oversight. Help me to figure in the prize-list."—X.

Spanish.—Upright comb in the cock, no falling over, even at the back part. Perfectly white faces in cock and hens. Blue legs. Plumage black throughout, no white spots on the hens. Hen's combs falling over one side of the face. Do not be content with the inspection of one side, but look well at both. It is seldom they are equally good. Choose the faces as deep and as smooth as you can. Any red is fatal. Choose your birds as large as possible, but recollect that is not the chief point.

Dorkings.—Choose as large as possible, with accurately developed five claws on each foot. Weight is here essential, but it must be good, firm flesh,—not fat. This has been frequently mentioned of late, but it is necessary, as this breed puts on fat easily. They may be single or double combed, but all must match. The same may be said of colour. It is a defect for the cock's comb to fall over. Any colour is eligible for competition, and although the hens must be alike, yet the rule is not so imperative as in many other classes. A striking difference is of course fatal. Choose your birds with sharp, intelligent heads, deep breasts, and broad, flat backs. Avoid faulty toes and swollen feet.

Cochin Chinas.—Large; well feathered on the legs, full of fluff behind; sharp heads; yellow legs. Positive match in colour. All the combs quite straight and upright. This is most imperative, and more Cochin prizes are lost by the presence of a crooked combed hen, than by any other fault. Matching is here very important: the different shades of buff, cinnamon, and lemon, should be well matched. Select birds as heavy as you can, provided they possess the other requisites. In the Grouse and Partridge, be careful that the cock has a perfectly black breast, and that the hens match, having as little tendency to buff on the breast as may be. In the White Cochins, be sure all the legs are yellow. Avoid crooked combs, scantily feathered legs, and mixed colours.

Brahma Pootra.—You may here have either light or dark, pea or single combed; but here again they must match in every particular. Dark birds should be pencilled all over: the light should have white bodies, with dark tails, striped hackles, and black flights. All should have well-feathered legs, and in these weight is very important.

The next classes are among those where feather is the greatest point:—

Polands (Black with White Tops).—Perfectly black bodies, and white tops as near as may be. There is a black front to all. Do not be induced to shave or cut this off, with a view to better the birds, or to increase their prospect of success. It would have an opposite effect. Their tops should be as large as possible, but they should be close, not loose feathered and falling about.

Golden Polands should be well spangled all over the body. The cock should have a laced and barred wing. His hackle and saddle should be striped. His breast well spangled, and his tail coverts well marked with rich golden colour. The top-knots of the hens should be very large and compact, composed of yellow feathers, edged with black.

Silver Polands should be spangled all over; and, like the Golden, the breasts of all should be spangled; and the cock should have a barred and laced wing. In these birds the tails are more scrutinized than in any other birds of the tribe. The feathers of all should be clear white, with a black spangle, or tip, at the end.

There are two great things to observe in the two last breeds. The cocks must have neither combs nor gills, and the hens must be straight backed. The last caution is necessary, as deformity is common among them. All Polands should have blue legs.

Pencilled Hamburgs.—Well-formed and full combs, seated firmly on the head, spiked behind, and turning upwards. The pencilling clearly defined all over the body, and rather dark than light, but on no account running into blotches of colour. The hackles should be white or yellow, and as clear from spots as possible. Deaf ear as white as snow, and round. Tail pencilled to the tips, and the tail coverts closely pencilled the whole length of the feather. Legs taper and leaden blue. The tails of the cocks should be black in the ground colour; but in each every feather should be edged with silver, or gold, as the breed may be. Black, silver, or golden tails, are alike faults.

Spangled Hamburgs must have the same combs and deaf ears as their Pencilled brethren; and in the Silver the tails should be clear, and tipped, or spangled, as we have described in Silver Polands. The combs of the Spangled are generally larger than the Pencilled; but they may be too large, and if they become deformities they pay the penalty of such vagaries. In both breeds, the bodies and breasts of the hens must be spangled all over, and the wings laced and barred. This latter point should be more marked in the cocks than in the hens. The hackles of the hens must not be clear, but mixed with black. The cocks must have spangled breasts: they should have blue legs. The under feather of the Golden should be buff. Neither Pencilled nor Spangled cocks are marked like the hens, but have more of the plain ground colour. The Gold and Silver-pencilled birds are almost white and golden; but the Spangled require more colour in breast, hackle, and saddle: the Golden have more than the Silver.

In all the *Bantams*, choose them as small as you can. In the Sebrights, look for accurate lacing, clear hen tails, tipped with black, and strutting gait. See that the combs are straight. In the Black and White, choose tails with long sickle feathers. They cannot be too long. See that legs and combs match, and select vain, strutting birds.

In *Game Bantams*, look for small, close-feathered Game fowls. Here you want the smartness of the larger bird, not the vanity of the Bantam. They should handle hard and compact, and the hens should accurately match the cocks in colour.

At last we come to positive weight. It is the great quality in

Geese; and if you match in colour, and select aright in sex, you will win, if yours are the heaviest birds.

Weight is most important in *Aylesbury Ducks*; but fatness must not interfere with symmetry; nor will the greatest weight ever attained do away with the effect of a yellow or a dark bill.

Choose your *Rouens* as large as you can; but recollect that in colour of plumage, and in bills, they must be the counterparts of Wild Ducks. Leaden bills for ducks, or orange for drakes, will be fatal to success.

The *Buenos Ayrean* should be entirely black, with a rich green metallic lustre. They cannot be *too small*.

X.—We have thus done your bidding, and hope you will not find it so tiresome to read as we have to write.

EXHIBITION OF CANARIES AND OTHER CAGE-BIRDS AT THE MECHANICS' HALL, DERBY.

THE first public exhibition of Canaries and other birds took place on Saturday, the 6th inst., in one of the rooms of the Mechanics' hall, Derby, under the most favourable, and, to the promoters of the show, gratifying circumstances. The day was fine, and the temperature of the atmosphere somewhat suitable for the birds, which were "feathered" to the greatest advantage, except in a few instances, where they had not entirely passed through their moulting.

The show was visited by many of the nobility, clergy, and gentry of the town and country, and parties were in attendance to explain to them the various breeds and nature of the birds, and likewise to attend to those persons who were desirous of purchasing. The stages on which the birds were placed were covered with pink glazed calico, and in the centre of the principal stage was an artistically designed crown and cushion, from the corners of which were suspended four small flags of different nations. The design was by Mr. Walker of Derby. Sir John Harpur Crewe, Bart., and Lady Crewe, of Calke Abbey, were amongst the morning visitors, and were large purchasers of the Gold and Silver-spangled Lizards, belonging to Mr. Ufton, and Mr. Barnesby, Derby, and, also, two beautiful specimens of Cinnamon and Buff Canaries of Mr. C. F. S. Smith, Derby, and Mr. Wood, Little Chester. Mrs. Sutton, of Shardlow, also purchased a pair of exceedingly fine Yellow Belgians, of Mr. Wood, and a beautiful Silver-spangled Lizard, of Mr. Barnesby. Several other sales of single birds were made.

At half-past one o'clock, so considerable was the interest attached to the show, that the room, although large, proved too small for the occasion; for the visitors arrived in such numbers from this time until the hour of closing, that it was impossible for all persons to gratify themselves as they wished, in examining the birds. The room was well-adapted in many respects, but unfortunately there was scarcely sufficient light on one side of the centre stage, and owing to this the hidden beauties of many birds were not seen to advantage. With this exception, the arrangements were admirable, and reflect the highest credit on the spirited promoters of this truly interesting exhibition. Owing to the extraordinary success which has attended their first public show, the Committee intend next year to spare no pains in obviating any circumstances that have tended to mar the interest and pleasure of the visitors, and they also intend prizes to be given for general competition to birds of various classes and ages.

The exhibition was not only good as regards the number of birds shown, but each class was well represented. The clear Yellow Belgian birds (which, for colour, stand first in that breed) were perfect specimens, particularly the one which was awarded the first prize, it being a very fine bird, and "well up" in most points. The one which obtained the second prize was well-bred, and belonged to Mr. Bunting. Four prizes were awarded to the clear Buff Belgians—the first being given to Mr. Orme, who likewise took the first prize in clear yellows. In the class of Yellow Variegated Belgians, there were some beautiful birds, the first prize being awarded, and with justice, to Mr. Sowter. Seldom have been seen such superior specimens, and it required much nicety of judgment to decide on the purity of this breed. The Buff Variegated birds were also good, especially one belonging to Mr. Ufton, which stood first; but generally there was a deficiency of regularity in the variegation, which is a strong point in determining good birds. The colour was true, and, in other respects, they may be pronounced fair specimens. Two prizes were awarded for Golden-spangled Lizards, but those entered for

competition were not entirely perfect birds. The Silver-spangled Lizards were first-class, with very slight difference between the two competing birds. Mr. Beales' bird, however, had the most points, and was placed before that of Mr. Ufton's. For Mealy Goldfinch Mules, Mr. E. Orme had no difficulty in carrying off the first prize: there were three competitors in this class. The total number of prizes awarded were twenty-two, and the birds exhibited amounted to nearly 300. Among the contributions to the show were several handsome pure Yellow and Buff Belgians, belonging to Mr. Orme; Gold and Silver-spangled Lizards, of Messrs. Barnesby and Ufton; Cinnamon and Buff birds, of Mr. C. F. S. Smith, of Derby, and also of Mr. Wood, Little Chester; Jonque Goldfinch Mule, of Mr. Boden; Mealy ditto, of Mr. Coxon; Norwich Canary, of Mr. Orme; a fine Mealy Linnet Mule, of Mr. J. Pym, Forester Street, who also contributed other birds, besides sending a case of foreign stuffed birds, and a picture of Wild Ducks, of Mr. Pym's painting. The Bullfinch, Goldfinch, Linnet, Thrush, and Australian Parroquet tribes were each represented. A number of birdcages were sent to the exhibition by Messrs. Torr and Wallace.

After the show, and the birds and other articles had been sent away, the members and their friends partook of an excellent and well-served supper, at Mr. Orme's, the Prince Albert, Burton Road, where the Society holds its meetings, and where any person desirous may join the club, which numbers about forty members. Mr. Brodie occupied the chair, and Mr. Stoddart the vice-chair. After the cloth had been drawn, and the healths of "the Queen," "Prince Albert, and the rest of the Royal Family," "the Mayor and Magistrates of the borough," &c., had been given, the health of "the Judge of the Bird Show" (Mr. T. Mason, Nottingham), was proposed by Mr. G. J. Barnesby, who, on behalf of the Society, presented to Mr. Mason a beautiful silver snuff-box, bearing an appropriate inscription, as a mark of esteem for his gratuitous services on several occasions. Mr. Mason acknowledged the present. Other toasts followed, including "the Visitors to the Exhibition," "the Secretary" (Mr. Ripley), "the Stewards" (coupling with the toast Messrs. Wood and Orme), "the Committee, and Messrs. Potter and Brodie," "the Press," and thanks to the *Derby Mercury* and *Reporter* papers for assistance rendered; the next toast proposed was "the Nottingham Canary Fanciers," to which were added the names of Messrs. J. Etherington and Mason, after which the company departed, amply gratified with the whole proceedings.

The following is the award of prizes:—

CLEAR YELLOW BELGIANS.—First, Mr. Orme. Second, Mr. Bunting. Third, Mr. H. Thompson.

CLEAR BUFF BELGIANS.—First, Mr. Orme. Second, Mr. Barnes. Third, Mr. Joseph Spencer. Fourth, Mr. Bunting.

YELLOW VARIEGATED BELGIANS.—First, Mr. Sowter. Second, Mr. Orme. Third, Mr. Thompson. Fourth, Mr. Brodie.

BUFF VARIEGATED BELGIANS.—First, Mr. Ufton. Second, Mr. John Spencer. Third, Mr. Carrington. Fourth, Mr. Orme.

GOLDEN-SPANGLED LIZARDS.—First, Mr. Ufton. Second, Mr. Wood.

SILVER-SPANGLED LIZARDS.—First, Mr. Beales. Second, Mr. Ufton.

MEALY GOLDFINCH MULES.—First, Mr. E. Orme. Second, Mr. H. Moreton. Third, Mr. Barnes.

JUDGE—Mr. T. Mason, Nottingham.—(Contributed by Geo. J. Barnesby, Derby).

OUR LETTER BOX.

WING OF THE BROWN-BREASTED RED GAME.—"Will you state whether a Brown-breasted Red Game cock ought to have the ends of each wing tipped with green or bay? Do broken spurs disqualify?"—J. W.

[The wing tips may be either colour, but we prefer green; it is not material. Broken spurs do not disqualify: they are hardly a disadvantage.]

LONDON MARKETS.—NOVEMBER 15TH.

POULTRY.

The trade has been very dull during the past week, and our former quotations have not been maintained. We have seldom seen the demand for good poultry so small at this season of the year.

	Each.		
Large Fowls	4s. 0d. to 4s. 6d.	Hares	2s. 6d. to 2s. 9d.
Small ditto.....	2 6 " 3 0	Partridges	0 8 " 1 0
Chickens.....	1 9 " 2 0	Grouse.....	1 9 " 2 0
Geese	6 0 " 6 6	Pigeons	0 7 " 0 8
Ducks	2 6 " 2 9	Rabbits	1 1 " 1 4
Pheasants	2 6 " 0 0	Wild ditto	0 8 " 0 9

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	NOVEMBER 23—29, 1858.	WEATHER NEAR LONDON IN 1857.								Clock afterSun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R.ands.	Moon's Age.		
23	TU	Echeveria Scheerii.	29.497—29.359	52—40	S.W.	.36	34 af 7	IV.	48 af 5	18	13 26	327
24	W	Epacris nivalis.	29.493—29.189	49—25	S.W.	.12	35 7	59 af 3	13 7	19	13 9	328
25	TH	Epacris impressa.	29.555—29.512	44—32	E.	.01	37 7	58 3	44 8	20	12 51	329
26	F	Erica distans.	29.575—29.479	46—40	N.E.	.10	38 7	57 3	18 10	21	12 32	330
27	S	Erica pilularis.	30.020—29.775	47—28	N.E.	—	40 7	56 3	37 11	12 13	12 13	331
28	SUN	ADVENT SUNDAY.	30.124—30.084	48—32	N.E.	.02	41 7	55 3	morn	23	11 52	332
29	M	Erica Caffra.	30.102—29.980	47—34	E.	—	43 7	54 3	56 0	24	11 31	333

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 47.0° and 34.1°, respectively. The greatest heat, 60°, occurred on the 28th, in 1828; and the lowest cold, 18°, on the 26th, in 1849. During the period 118 days were fine, and on 99 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

WE would direct particular attention to the advantage to be gained by mulching, or covering the ground with any short rotten litter, or leaf mould, particularly around all lately planted trees and shrubs; the object is to shut in, or rather to prevent, the departure of the remaining ground heat of the past summer. With cold winds and sharp frost acting upon the soil, a progressive loss must ensue for the next two or three months, unless counteracted in some degree by mulching.

ASPARAGUS (to force).—The beds, either in frames or pits, used for growing Melons or Cucumbers during the summer, and now exhausted of their heat, will be the best in which to plant the *Asparagus*. The roots should be three or four years old, taken up carefully, packed closely together when planted, and covered, five or six inches, with any light soil. Linings of well-prepared dung to be applied round the beds, when a gentle genial heat will be communicated to the roots, and the shoots will grow slowly and strong. When the shoots begin to appear, a large portion of air must be daily admitted, as the weather will permit, to give a green colour and good flavour to them. As the heat acts more quickly on the sides, and gradually extends to the centre, a regular succession of shoots is produced. By such treatment it will be fit for table in three weeks.

BRUSSELS SPROUTS.—It is usual to cut off the top, or head, about ten or fifteen days before gathering from the stem. The dead leaves to be removed, but retaining all the green ones, as they serve to protect the young side sprouts.

CABBAGE.—Draw earth to the stems of the autumn plantations, as it invigorates, and prevents them being loosened by the winds.

MUSHROOM BEDS.—If out of doors, should be protected with a thick covering of straw, and mats laid over that, to protect them from wet and frost. When the straw is wet, it should be replaced with dry.

FRUIT GARDEN.

APPLES, CHERRIES, PEARS, and PLUMS.—In pruning, retain the best-placed shoots of last summer in vacant places, removing worn-out and irregular branches and dead wood; and lay in, and nail to the wall, the shoots at their full length, from four to six inches asunder.

APRICOTS, PEACHES, and NECTARINES.—In pruning, leave a sufficient supply of the best-placed side and terminal shoots, and cut out all foreright and super-abundant ones, and all unfruitful and useless old wood; shorten all the young branches that are left about one-third, and the weaker ones cut shorter; then nail the whole tree regularly, laying the branches about three or four inches apart.

FLOWER GARDEN.

AS GRAVEL WALKS in good condition contribute to give a cheerful appearance, and attract to the more frequent enjoyment of the flower garden and pleasure

grounds, in favourable winter weather, it is necessary, where weeds are still making their appearance on the surface, to remove them by hand-picking. The hoe and rake should be avoided as much as possible at this season of the year, as they do more harm than good, by breaking up the surface, which is not always effectual for the destruction of the weeds. Walks, which are overrun with Liverwort, or the various Mosses, had better be dug over with the spade; then raked and rolled smooth, they will maintain a neat and clean appearance for some months to come. If gravel is easily procured in the neighbourhood, a thin sprinkling all over the surface, before rolling, would be of great service.

BOX EDGING.—Now is a good time for taking it up, and replanting.

CARNATIONS and PICOTEES.—The florist's labours are now drawing to a close for the season. Being framed, and in their winter quarters, the chief demand on his time and attention will be to give air to his plants in favourable weather.

DAHLIAS.—They should all be got up by this time, and their tops cut off; and, having been exposed, under cover, in a dry, airy place, will be ready to store away, as recommended a fortnight ago.

LAYING DOWN TURF.—This is the best season, both for facility and success. If the ground is newly made, it will require to be perfectly solid before laying down the turf, that it should not give way afterwards. When laid down, to be well-beaten all over by the turf-beater, to close all the edges of the turf, to flatten out the surface, and to level down all inequalities.

TULIPS, we will suppose, are safely planted. It will be advisable to keep heavy falls of rain from the beds, by means of mats stretched on hoops for this purpose, and which will also be useful for protecting them from severe frosty weather.

WILLIAM KEANE.

HORTICULTURAL SOCIETY'S FRUIT AND FLOWER SHOW.

ST. JAMES'S HALL, NOVEMBER 17TH.

THE greatest difference of this show of fruit from that of last year, at Willis's Rooms, was in the greater number of ripe Pears and Apples on the present occasion. In other respects, the Pines, Grapes, Melons, Cucumbers, Oranges, and small fruit, were much the same as I put them down last year. But the miscellany of extras, which occupied the end tables and lower regions at Willis's, did not half pay for the trouble; and that experiment was not now repeated, to the great comfort of the Judges and the reporters. The next distinguishing feature, on my entering the gallery of the Hall, to take a bird's-eye view of the whole, in order to see the kind of taste that might be displayed in the new arrangement for fruit and flowers, was to find out and see, with my own eyes, that the Hall was supported with borrowed pillars, and supports of various lengths, heights, and thicknesses;—just at the commencement of the

period at which we of THE COTTAGE GARDENER took up the practical details of "halls," for fruits and flowers, without any supports whatever. The head, or ridge piece, the wall plates, the four corner posts, and the bracing rods of the Pomological Society, were engaged for the occasion, or rather were borrowed, because the fruit committee of the Horticultural Society is not sufficiently "organised" yet,—that is, not quite ripe enough to come to table. The progress of this great fruit committee, however, is very satisfactory; for in the last nine months it has raised itself from zero to 32°,—just to the freezing point of our scale; and the thirty-two stages of "private self-organisation" have been published by order of the Council; and after getting out of the ice and frost of the excessive legislation, in "rules and regulations," we may expect soon to hear of the mellowing process. Meantime, it is a good sign of the times, that the young and vigorous props of the Pomological Society give a helping hand to get grandmamma on her legs again. We cannot yet do without granny's pockets more than we could fifty years back. But that is not all the good resulting from this kindness and consideration on the part of the Pomological Society. Your humble servant has had a holiday at last. Mr. Hogg—as one of the most practical and most scientific judges of fruit in Europe, as the founder of the Pomological Society, and as co-Editor of THE COTTAGE GARDENER—has been requested to draw up a pomological report of this Show, for the use of the Horticultural Society and its fruit Committee, in its ripening progress; and having very good naturally undertaken the task, which is but child's play to him, although an awful task to most gardeners like me;—I say, through all this kindness, I had a holiday, and this is how I spent it.

Just as the Judges had the Hall put square for them, I was seated in the gallery opposite the organ. The front seat there, in the centre of the gallery, is the very place for seeing any kind of exhibition in the Hall, critically. There one can see, with one eye, the kind of taste which is displayed in the disposition of the things which are on exhibition, and the kind of judgment with which that taste is carried out; and nothing can be put on paper more pleasing to both eyes, than to see a perfect arrangement of things according to our ideas of the composition. That, then, was the ease with me; and the only thing in which an English critic could differ from me, or in which a lowland critic, in Scotland, could differ from a Highlander like me, was immediately on the right and left of the organ, towards the very top, or "back of the stage," to use gardening language. They might object to the plants there not being so tall as to give a "face" to the whole hanging grove: that objection was the prime beauty in my eye, because it was the most natural to it. Instead of looking at two overhanging wooded cliffs,—as the face system would make them,—I perceived the image of two, deep, well-defined *corries*. But, as there is not a word in the English language to give the meaning of the Gaelic word *corrie*, I must refer the reader to any of those sportsmen who took down two royal stags, right and left, in a highland corrie; for I had my game and sport in the two corries made by Mr. Henderson, the head gardener of this Society, on either side of the grand organ, in St. James's Hall; and I was never more pleased, or had a more settled conviction, that no one with an "eye" could possibly find fault with anything before him, just as it then stood. I have a bird's-eye drawing, in pencil, of all the principals; and after sleeping over it, and studying it over once more, I am sure of the point. Nothing of the kind was ever better done; and the whole credit is due to Mr. Henderson, and to those who assisted him with gratis contributions to carry out his design.

Those who came out the most handsome on this score were—Mr. James Veitch, of the Exotic Nursery, Chelsea; Mr. Arthur Henderson, of the Pine Apple Place Nursery; and Edward Rosher, Esq., the gentleman who founded the Rosherville Gardens. I had the good luck (but it

was all luck that day) to get hold of an official list of the furnishing plants, from Mr. A. Henderson. Twenty-six Dragon trees! fourteen *Dracæna terminalis*, and twelve *D. ferrea*! (read that, all ye youths who aspire to the spade!) *Cyanophyllum magnificum*, the most noble and most magnificent of all the fine-leaved plants we know of, a *Melastomad*, and a moderate stove plant, with seven pairs of leaves, and such velvety, dark greenish-brown leaves above, and bright crimson purple underneath, as no other family of plants could produce. *Sonerilas*, *Dumb Canes*, *Ardisias*, *Rhopalas*, *Yucca aloifolia variegata*, *Dracæna australis*, *Cupressus Lawsoniana*, and *Thuja gigantea*, *Latania Borbonica*, a pair of the Japan Variegated *Pandanus*, *Grevillea longifolia*, *Croton pictum* and *variegatum*, *Aspidistra lurida variegata*, *Jacaranda filicifolia*, and several Ferns and others, which are not so easy to be got for winter decoration. There was an evergreen belt of plants along the centre of the middle table. And next to the belt, all round, stood the Pine Apples, in pots; and the cut ones in a row, with two breaks in the row, to let in two assortments of preserved fruits, in sealed bottles, glasses, or jars.

At the end next the door was a large bunch of the Cavendish Banana fruit, half ripe. Then Rotterdam Grapes,—not so good as our best out-of-door ones. Then English Grapes in earnest, in baskets of 10 lbs. each, in dishes of three bunches, and in single bunches; succeeded by the Orange family, in collections of home or foreign growth. Then Melons, of which there were eight or nine. Then Plums and Prunes,—that is, dried Plums. Then Alpine Strawberries, Currants, Raspberries, and Passion-Flower and *Eugenia Ugni* fruit. After them, the beginning of the most glorious-looking Pears that England ever produced; and these were continued at one half of the end table and one whole side table, which took six large dishes across in one row. And in a row behind them all stood a noble belt of evergreen, and ever-variegated, and very fine-looking leaved plants (in single specimens), from the contributions aforesaid, and from a fine collection from the Messrs. Henderson, of the Wellington Road Nursery,—the principal names of which are lower down.

The third table, on the north side of the Hall, was similarly staged with the best Apples; and a bank of Pompones and fine-leaved plants behind them. The rest of the end tables were filled with Pears and Pine Apples, and a bank of Pompones behind them also; and below the end gallery were collections of Indian bottle Gourds and Squashes; backed with tall Chrysanthemums, and flanked with Pompones.

Under the side galleries was also decorated with Pompones, Chrysanthemums, and fine-leaved plants. A wide, free passage was left in front of the "chair" and organ, where Mr. Rivers' Roses were spoiled in effect by cutting his collection into two parts, to get rid of this wide, free passage, in order to suit the florist's idea of comfort. By avoiding the middle passage, the semicircle, between the chair and the middle passage, was particularly well done, with the best and best-trained Pompones that were ever seen, in three well-matched and contrasted pairs; and a pair of handsomely-furnished *Rhopalas* (equally well matched) on each side of the middle pair of Pompones, which were in the centre of the half-moon, or curve. The two corners, or horns of the moon, were filled in with fine groups of plants; the front of the Pompones richly clothed with Lycopods; and a subdued row of small plants stood between the chair and the Pompones. This was exquisitely well done.

Behind the chair—where the great Rhododendrons, from Sion House, stood in the spring—was a collection of trained Pompones, across the slope, so to speak; and, flanking this collection, at both ends, were two other collections of large-flowering Geraniums, falling away in heights in the distance, until they formed the said corries at the top, among some noble trees,—too far up and off

to be seen without a hunting telescope. Between these flanks, and behind the cross-laid Pompones, on one side, and the organ for the other side, stood the grand centre-piece of the day and of the occasion, for which more money was offered, and wisely offered, than for any class or item of the show.

This centre group was of a collection of fine-leaved plants, for which five pounds were offered. They were supplied by the Messrs. Jackson, of Kingston, every plant of which was a fine grown specimen,—such as *Livingstonia*, *Aspidistra*, *Aralia*, *Monstera*, *Dasyliion*, *Berberis trifurcata*, *Maranta vittata*, and several kinds of Palms.

The second prize in the same class was awarded to Mr. Rhodes, gardener to P. Phillipotts, Esq., of Stamford Hill. Among his plants were—*Acrostichum alcicorne*, *Bignonia rex*, silver-leaved Pine plants, *Cissus discolor*, *Aspidistra*, *Pandanus javanica variegata*, *Farfugium grande*, *Aralia paparifera*, and others.

An extra first prize in the same class was given to the collection from the Wellington Road Nursery. There were different *Rhopalas*, including—*R. Jonghii*, *Jacaranda Clowesiana*, *Begonia splendida argentea*, *Ficus imperialis*, *Grevillea longifolia*, *Fourcroya gigantea*, *Monstera pertusa*, and others.

The best six Pompones were those set in pairs in front of the chair, from Mr. Wiggins, gardener to Mr. Beck, of Isleworth, and for size of plant and bloom were never exceeded. If anything could reconcile one to the flat way of training, it must be the perfection of the art as here set forth. The first pair were *Général Canrobert* and *Brilliant*, the middle pair *Mustapha* and *Duruflet*, the third *Bob* and *Hélène*, all over four feet across, and in geometric circles, in the first style of art, growth, and bloom.

Mr. Wortley, of Stoke Newington, took first and second prizes for collections of mixed large kinds and Pompones. The first with—*Defiance*, *Prague*, and *Pilot*, in large kinds; and in Pompones—*St. Thaïs*, *Drin Drin*, *Requiqui*, *La Vogue*, *Sultana*, which is like *Hélène*, and *Trophée*, I think. The second with—*Vesta*, *Mount Etna*, *Annie Salter*, *Cedo Nulli*, *Hélène*, *Brilliant*, *L'Escarboucle*, and *Duruflet*.

In the Nurserymen's class, Mr. Bragg was first, with—*Drin Drin*, *Hélène*, *Aurore Boreale*, *Madame Fould*, *Mustapha*, *Comte Achille Vigier* (spelled *Archille*), *Requiqui*, *Cedo Nulli*, *Asmodie* (spelled *Asmoides*) *Général Canrobert*, and *Adele Prisette*.

Mr. Forsyth, of Shacklewell, was second, with—*St. Thais*, *Adonis*, *Jonas*, *Alexandre Pélee*, *La Vogue*, *Requiqui*, *Aurore Boreale*, *Nelly*, and *Bob*. He was also third best, with—*Hélène* (four feet across, and upright trained), *Bob*, *Marabout*, *Madame Rousselon*, *Cedo Nulli*, *Comte Achille Vigier*, *Adonis*, *Madame Celeste*, *Philopel* (a fine yellow), *Requiqui*, and a creamy-white kind, named *Nitida*, or *Vidita*, which I saw for the first time. All Mr. Mae's plants were trained after nature, not screwed down, like the feet of the Chinese women.

In the large Chrysanthemums (of ten plants in a collection), Mr. Argent, nurseryman, of Stoke Newington, was first. His plant of *Christine* was full eight feet in diameter, probably the largest ever seen; *Eclipse*, *Defiance*, *Albin*, *Alfred Salter*, *Vesta*, *Pluto*, *General Havelock*, a trick of trade,—it is an old kind, which was superseded by *Pilot*. I knew it well twenty years back, but, like the boy and his letters, "I cannot mind the name 'on him.'" This collection formed the righthand flank, looking up to the organ; and its match flank on the left was from Mr. Macintosh; but I could only read the front names; the rest were too far up the glen, towards the corrie, for me. They were—*Chevalier Dumage*, *Christine*, *Poudre d'Or*, *Hermine*, and *Auguste Mié*.

For ten Pompones, by amateurs, Mr. Shrimpton, gardener to A. Doxat, Esq., Putney Heath, came in first, with *Duruflet*, *Madame Rousselon*, *Général Canrobert*,

Hélène, *Requiqui*, *Comte Achille Vigier*, *Mustapha*, *Autumnum*, *Brilliant*, and *Madame Fould*, which was over three feet in diameter, although he could only buy it very small last April or May.

The CUT FLOWERS were all from one person, Mr. J. H. Bird, a celebrated nurseryman from the centre of the Chrysanthemum world, at Stoke Newington. The Princess Mary of Cambridge admired them more than all the rest. After going all round with the Duchess of Cambridge, she said she was not wanted away so soon as her mother, and would stop to have another look; and Mr. Bird, with a large Chrysanthemum stuck in his button-hole, told her Highness all about them. But whether he let out the secret of dressing them is more than I could learn. They were certainly most splendidly done, and all in lots of one dozen of a kind, thus—twelve of each of *Queen of England*, *Beauty*, *Plutus*, *Dupont de l'Eure*, and *Themis*. Also, twelve mixed kinds, thus—*Nonpareil*, *Beauté du Nord*, *Alfred Salter*, *Arigena*, *Trilby*, *Virgil*, *Etoile Polaire*, *Hermine*, *Miss Kate*, *Elizabeth*, *Antigone*, and *Madame André*. For these he had an extra first prize, and deserved it.

Mr. Oubridge, of Stamford Hill, was second, with twenty-four blooms mixed, some of them two of a sort, thus—*Two-coloured Incurved*, *Queen of England*, *Beauty*, *Madame André* (not *drey*), *Defiance*, *Alfred Salter*, *Queen of England*, *Themis*, *Nonpareil*, *Plutus*, *Newington Beauty*, *Madame Lebois*, *Madame André* again, *Two-coloured Incurved* ditto, *Lutea Formosa*, *Dupont de l'Eure*, *Racine*, *Hermine*, *Raymond*, *Stellaris Globosa*, and *Etoile Polaire*.

The spelling of the names were nearly perfect here, and at the Crystal Palace. *Drine Drine* and *Ceda Nulli* were the only two wrong spellings at the Crystal Palace; and *Archille* for *Achille*, *Andrey* for *André*, and *Hermione* for *Hermine*, were the only breaches here. But the florists' are wrong in adopting *Hermine*. *Hermione* is a classical name, for which there is no law for taking liberties with. *Whipcord* is, therefore, better than money prizes for good spelling at exhibitions. Just show the people of a whole village, that the beau of the parish is so thick in the skull, that he cannot spell the names of common plants, and my word for it, he would soon learn to spell them in Greek characters, if it was necessary to keep the girls from quizzing him.

The newest, and the only really new Chrysanthemum, was a sport Pompone, after the habit of *Cedo Nulli*, and with the exact flower of *La Vogue*. A good hand, like Mr. Wiggins, might bring out *La Vogue* itself to be as this one was exhibited. But Mr. Bird, who had a prize for it, adopts it as his own seedling. Six small plants of it, from late propagation, were beauties, after nature herself.

The other newest pot plant was a most useful-looking, dwarf, bushy, rosy *Melastomad*, called *Heterocentrum roseum*. There were three plants of it, from Messrs. Spary and Campbell, of Brighton. It would bloom in the drawing-room all the winter.

Also, *Calicarpa rosea*, from Mr. Standish. A hardy, useful shrub, well furnished with clusters of small, rosy berries, which remain on all the winter.

There were cut flowers of a high-coloured seedling *Tyda*, from Mr. Elliot, gardener to Lord Ilchester. And a bunch, or cluster, of unripe fruit of *Musa Cavendishii*, the dwarf Banana, from Mr. Hamp.

GRAPES.—The same exhibitor was first again this year with *Muscats of Alexandria*, even superior to those with which he first surprised us at Willis's Rooms. Mr. Drewett, gardener to Mrs. Cubitt, has now beaten all competitors in *Muscats*. He was also first with a dish of Any White Grape, for which he selected the *Trebiana*, the three bunches of which weighed 12 lbs. The second best in *Muscats* was R. Crawshay, Esq.; and Mr. Hill, from Keele Hall, was next to Mr. Drewett, with *White Syrian Grapes*. Mr. Hill was first, with a dish of *Black Hamburg*; second, Mr. Tillyard; and third, Mr. Frost.

In other Black Grapes (in single dishes), Mr. Smith, gardener to H. Littledale, Esq., Lesand Hall, Cheshire, was first; and Mr. Millar, gardener to Sir W. Smith, Bart., Worcestershire, was third. No second appeared in this class. For the largest bunch, an extra first prize was given to Mr. Little, gardener to A. Darbe, Esq., Stoke Court, near Slough. This was a *Barbarossa* bunch, weighing 4 lbs. 13 ozs. For baskets of *Black Hamburgs*, weighing 10 lbs., Mr. Kay, market-gardener, Finchley, was first; second, Mr. Tillyard; third, Mr. Hill. For 10 lb.-baskets of *Muscats*, Mr. Hill was first; second, Mr. Miller; and third, Mr. Crawshay. But none of these *Muscats* came near those from Mrs. Cubitt.

There were only two PINE APPLES shown on the plants in pots: they were from Mr. Solomon. In the class for three Pine Apples, Mr. Ingram, from Her Majesty's garden, was first, with three *Cayenne* fruit (9lbs., 8 lbs., and 6½ lbs.)—splendid fruit; and next stood Mr. Mackey, gardener to R. Ellison, Esq., Sidbrook Holme, Lincolnshire. For single Pines, Her Majesty was first again, with a splendid *Cayenne*, 10½ lbs.; and I think Mr. Chilman, gardener to Mrs. Smeath, Ashtead House, Epsom, was next. There were several lesser prizes and extras.

There were forty dishes of the various ORANGE TRIBE, the first prize for which went down into Worcestershire, to Mr. Miller. Mr. Higgs, gardener to Mrs. Barchard, Putney Heath, had a first-class certificate for putting up fresh leaves and blossoms with his Orange collection. See how well ladies can produce the beautiful! Mr. Williams, gardener to Mrs. Warner, was also up to the mark in this fragrant class.

There was only one prize given to MELONS. The best, called *Egyptian Green-flesh*, was from Mr. Legg, gardener to Baron Hambro', Roehampton.

At this part of the exhibition stood the fruit of *Eugenia Ugni*. Mr. Cox, gardener to Mr. Wells, of Redleaf, was first, with the finest flavoured yet brought out. Knowing both master and man to be heart and soul in gardening, I had no fear of tasting their fruit in their absence, and found it just as I say. I also found Mr. Cox's name to two first prizes and three second prizes in fruit; but I leave the names of Pears and Apples to Mr. Hogg. The next prize for the *Ugni* berries went to J. Luscombe, Esq., Combe Royal.

For best PLUMS (*Coe's Golden Drop*), Mr. Cox, aforesaid, was first. Mr. Robinson, gardener to Lady Foley, at Stoke Edith, near Ledbury, had a certificate for the same; and the second prize went to Belvoir Castle, to Mr. Ingram, jun., gardener to the Duke of Rutland, who was also first with excellent Strawberries, and most of the small fruit, I believe.

Here Mr. Higgs had a basket of the *Purple Passion-Flower*. Another of *Cape Gooseberries* by some one else; and then the grand match for the Derby, among collections of six fruits, of the eight following kinds of PEARS,—viz., six *Seckel*, six *Winter Nelis*, *Gloot Morceau*, *Beurré Diel*, *Knight's Monarch*, *Passe Colmar*, *Easter Beurré*, and *Beurré Rance*,—a sight to be remembered. Here, Mr. Ingram, sen., was first, with Her Majesty's contribution; Mr. Cox, from Redleaf, was up close to him in the second; and Mr. Carmichael, gardener to the Countess of Dunmore, was third. A splendid run, that would, or ought to satisfy Harry Hieover himself.

Next on the table was a race for the four heaviest *Duchesse d'Angoulême* Pears in the world. Here, Mr. Halley, of Blackheath, was first; and Mr. Bowie, from Chillingham Castle, was second; but who was third or fourth I did not observe.

The fact is, I began to nod. But I recollect having seen American Cranberries on the shoots, certificated for Mr. Tillyard. Beautiful Virgin Honey, in glasses, from Messrs. Neighbour and Son's hives. The Berlin dried-flower nosegays. The finest dish of the old Quince I ever saw, from Mr. Rust, gardener to the Right Hon. L. Sullivan, of

Broom House, Fulham, which reminded me of the Frenchman and his man cook, Carlo Gymnoerankum, who put some Quince slices into the Apple pie one day, to test his master's pretensions to genuine flavour, when the old man was so taken with the improved taste, that he ordered his man Carlo, whenever he made an *Apple* tart for him, for the future to make it all of *Quinces*!

D. BEATON.

VIOLETS IN WINTER, WITH CULTURAL REMARKS.

We have no flower that possesses greater eligibilities for furnishing a winter bouquet than the Neapolitan Violet. No kind is more esteemed by the ladies; and, indeed, when we consider their delicious scent, and their bold and prepossessing appearance, when well grown, together with their chaste colouring, we may readily see, I think, that they stand in the foremost rank amongst winter flowers. Many papers have been written about them as years passed by, and some of much merit; but as I have been a successful cultivator, in the main, for many years, and closely watched their habits and character, nearly forty years since, in the neighbourhood of the metropolis, I again offer a few remarks.

The first successfully forced Neapolitan Violets I ever saw were at Spring Grove House, then the seat of Sir Joseph Banks, of world-wide celebrity: the celebrated Mr. Oldaker was then gardener. This was in the January of 1814, if my memory serves me aright. To everybody that is at all conversant with gardening, the name of Old-acre will be familiar. He it was who first introduced mushroom-house culture, whilst he was gardener to the Emperor of all the Russias. But these facts are pretty generally known. Mr. Oldaker showed me a frame, or pit, in which were his potted Violets, all, I think, in five-inch pots, and they were in fine bloom, although surrounded by snow. He talked much of using a deal of bone manure in his compost, and I think he had a mild bottom heat; but of this I am not perfectly assured. In these days, he would probably be a little over forty years of age, and a fine portly John Bull looking man he was. As we dined with him, we had the pleasure of hearing his Russian tales after dinner; and the veteran brought forth his maps, in order to enlighten us about Russia.

But to the Violets again. The first thing I would urge on the young cultivator is, not to think of producing a profusion of foliage,—this is a gross error. If one man were to commence with runners about midsummer, and put them in very rich soil, and another were to get his runners to work by the early part of May, planting them on ordinary soil, how different would be the results. The first would have plants twice as gross in foliage as the latter, albeit planted so much later; but the latter would have blooming plants in the middle of October; and, at the same period, there would be nothing but foliage on the other. Therefore, I say, get them early, and plant them on moderate soil, in preference to their being late and hurried.

One thing is indispensable,—they should be planted in a perfectly open situation, without shade; and they require watering. They should be planted on raised beds, not dug above four to six inches in depth, and the beds dressed with good sound loam and leaf soil. This will be found to produce stout and compact buds, with a moderate amount of foliage; and such will blossom much finer than huge, overgrown, and bushy plants. They need no other particular treatment through the summer, except keeping clean; but about the middle or end of July they will have produced many runners. These runners must, in the main, be pruned away; but it sometimes happens, that certain short and compact runners are produced, very near the stem, having buds much like the parent plant. Such as look likely for blossom may be reserved,

the rest pruned closely away. This dressing must be repeated again about a month, or less, before the plants are put in their winter quarters; they must then be trimmed thoroughly.

Now we come to the forcing of them, if forcing it may be called. I force them in a brick pit; but it matters not what the structure, so that the conditions are proper. And what are these conditions? First, a perfect security against frost. One degree of frost is by no means agreeable to them, although they may bear it. Whether in pots or planted out, they require good soil now, enriched with old manure, and containing some sand and charred material, if at hand. A small bottom heat, of about 65°, would be serviceable, if it could be thus secured; but they will do very well without it. I have planted them, for some five-and-twenty years, in pits, sometimes with bottom heat, sometimes without, and with slightly varying success; perhaps dependent more on the character of the winter, with some other little matters of a collateral character, than on the precise amount of warmth the soil contained. But the great affair through the winter is, to place yourself in such a position as to be able to give air, or ventilate, on every favourable opportunity. Now, I do not think that bottom heat artificially procured is a benefit in most winters, unless it could be accompanied by a positive air heat, as from a pipe, or flue, in order to dry the damps. A lively bottom heat, without this, is a dangerous enemy in the months of December and January; for if, as frequently happens, the pit, or frame, has to be kept closed for a week or so, in consequence of the severity of the weather, the foliage is sure to commence rotting; and this gangrenous matter spreads like wildfire, and generally at once mars the future welfare of the whole. This mouldy-looking character, then, is the thing to be avoided; and the best plan I ever proved,—which I still adhere to,—is, to get the plants so forward and so compact, that they offer no temptation, through a profusion of leaves, for the damp to lodge. It is readily dispersed by the least ventilation, whilst the tall, leafy plants will hold damp for days, or even weeks.

Now, plants managed as I have recommended will produce a nice bloom by the beginning of November, and not only blossom, but blossom-buds by thousands will be advancing through the pit. Such being the case, there needs no forcing, strictly speaking,—what they want is the best of covering. It was before observed, that they must not be frozen; yet, as it is indispensable that they be kept very near the glass, it will be seen that such is a position very liable to be affected by very low temperatures. This leads me to speak of the importance of attending most carefully to roof covering. This, indeed, is one of the things that must be kept well fixed in the mind. If they get blistered by the frost, through nearness to the glass, they will be sure to suffer in proportion. In our cold pits we cover, perhaps two feet in thickness, with dry litter,—this pressed tolerably close with mats,—and, indeed, sometimes even more.

Every opportunity should be sought to give them air. They can scarcely have too much, if they are not frozen; for both their delicious aroma and their very colour are heightened by such course of practice.

And now to another point. The slugs are sad defacers of these beautiful flowers. I was for years plagued thus, and used to bait most pertinaciously with Cabbage leaves, and such like, but have long adopted the plan of strewing sand over the whole surface of the pit, using a very sharp kind: over this the slugs will not travel. If the plants are grown compact, and have good crowns, with short-stalked leaves, they will enjoy very rich soil in the pit. My practice is, to cover the surface, before they are placed on it, with rotten manure, and to set their balls on it; then to pack them round with compost. As to the latter, one-half should be a strong loam, the other half any dark and rich soil. They are very partial to well-decayed heath soil.

We now come to watering and shading. They require no water, with me, from the end of October until the early part of February. Watering in the dead of winter would be a serious procedure; indeed, they do not require it. I water them well when planted, which is generally about the end of September, and this suffices until February. Towards this period, or as soon as the winter has fairly broken up, we give them a thorough watering with liquid manure; and henceforth they will need water occasionally.

Shading is the next affair; for as soon as March arrives we frequently have intense sunlight, which is very prejudicial to the colour of the flowers,—turning their fine blue or lavender into a “washed-out”-looking sort of tint, possessing no character. Screens of some kind should, therefore, be put on as occasions demand, at the same time giving air freely. About the middle of April, I have been in the habit occasionally of taking the sashes entirely off, and nailing mats, or some screen, in the place of them, in order to retard them.

By the above practice we command Violets constantly, from the end of October until May. There are few flowers so sweet and so acceptable, that can be had in such long succession.

October 25th.—Pit in full bloom. Fine bunches gathered days since.

R. ERRINGTON.

MAMHEAD.

THIS picturesque residence of Sir R. Newman, Bart., is delightfully situated in the centre of an amphitheatre, wooded landscape, rising gradually from the west bank of the estuary of the Exe. It is about eight miles south from Exeter, and about four miles west from the Starcross and Dawlish stations, on the Exeter and Plymouth Railway. Having had some tantalizing views of this place from the east side of the river, instead of returning to Exeter, we crossed from Exmouth to Starcross, and, after waiting some time in vain for a conveyance, tramped it, as would at once have been our mode in days of yore, finding in the process the deceitfulness, as to distance, of such undulating scenery, and only regretting that the time thus consumed left so little on our hands for examining the wonders and beauties of this delightful place.

On getting to the mansion,—an elegant, white-stoned structure, seemingly a mixture of the Elizabethan and the Gothic,—the first thing that struck us was the beautiful diversified scenery, seen almost in every direction,—approaching Exeter on the north, shelving down in beautiful wooded glades to the Exe on the east, and rising over the undulated rich scenery beyond Exmouth and Topsham; whilst to the south-east the eye passes over the Channel, and its many specks of sails, until bounded by the horizon. The second thing that struck us was the comparative lowness of the elevation of the house, taken in connection with the fact that it formed such a prominent feature from considerable distances, accounted for by the circumstances, that the position was the front of one of the numerous knolls; that the ground from it, relieved with many undulations, fell somewhat regularly to the estuary; and that no large trees were near its front, though plenty of fine timber supported its back and flanks. Close to the north-east side of the mansion is situated a massive, castellated pile, of red-sandstone, used as the stables and offices, probably designed to represent the ancient mansion, an idea heightened, by the walls in many places being covered with Ivy, and the foreground dotted with homely shrubs.

The front of the mansion is graced with two terraces,—the first, consisting of a broad piece of gravel and a wide margin of grass; the latter, adorned, at something like regular intervals, with Cypresses, Irish Yews, &c. The second is likewise chiefly of gravel and grass,—the grass switched out a little in the way of a parterre, so that the cut parts might be a sort of counterpart to the lines and angles of the mansion. In the centre of this terrace,

standing alone in its solitary grandeur, was a circle of earth, some fifty to sixty feet in diameter, filled to overflowing with the Scarlet Geranium, the centre being considerably elevated, yet not so much so but that from the higher terrace you could let your eye sweep over the whole, and take in the surroundings of the terrace and the park beyond. That such a large bed, standing alone and of one colour, was very striking and unique, there can be no question. That the planting and cultivation had been managed in first-rate style, there can be as little doubt. Those of our readers who had an opportunity of seeing the scarlet Pelargoniums, in vases, at the Crystal Palace, not this year, but in August and September, 1857, and could think of one of these vases, swelled out by the stroke of the magician's wand into one some fifty feet in diameter, would then form something like a correct idea of the massive, uniform beauty of this solitary gigantic bed. As to the propriety of thus placing it, tastes will differ. I candidly own, that on such a ticklish subject I have hardly come to the conclusion of forming an opinion.

These terraces, supported by green slopes, too steep to be easily mown, and quite deep enough for the height of the mansion, extend far enough to the south, beyond the end of the building, to permit of a very nice Italian garden, or panel garden, being sunk there,—some three feet below the level of the gravel on the upper terrace. At the farther corner of the mansion is situated a neat, small conservatory, communicating with the mansion. Near the end of this conservatory, and on much the same level as the terrace on the other side of the sunk garden, was a long parallelogram bed, filled with Hollyhocks, Dahlias, &c. On the principle of unity of expression, I should like to grass down that bed, and supply the place with specimens of Cypress, &c., as on the other side. The chief part of the sunk garden is an oblong parallelogram, divided lengthwise into two by a walk down the centre; and, as far as I recollect, there was a fountain in the centre. Each side is then laid out, by a series of circles down the middle, and a narrow border all round,—the border being chiefly filled with a mixture of herbaceous and bedding plants, and some of the circles with good-sized Rhododendrons, and others with masses of bedding plants. The very intelligent young man who has the charge of this department, and whose name I regret to have forgotten, drew our attention to the fact, that these circles of Rhododendrons did not harmonise with the other parts of the garden. There can be no question of the correctness of his opinion, if, as I believe, much of the interest and beauty of such a sunk garden, consist in the whole of that garden being taken in at a glance from any part of the elevated terrace round it. Even if such a garden were to be filled with a variety of evergreens in winter, and bulbs and other early flowers round the edges for spring, it would be desirable that even these evergreens should be so low that the eye could easily embrace the whole. In summer, when floral ornament is the chief thing, all else should be made subordinate to this idea; and hence these circular masses of tall Rhododendrons break in upon the very object the designer must have contemplated. The sparing introduction of upright, architectural-like shrubs,—as Cypresses and Junipers,—not in such main clumps, but as separate and distinct features, would be quite a different affair. As it was, though the garden was well managed, there seemed to be a want of unity. This idea was farther confirmed, by the contrast exhibited between this main parallelogram part of the garden and a large semicircle, opposite its centre, scooped out, as it were, to the same depth from the main terrace side. This semicircle was laid out, as far as I recollect, in six regular, equal-sized beds, narrow at the centre, and wide at the circumference, which were densely filled with bedding plants, contrasting in their colours, and which for masses of bloom were second to none we had seen this season. If it were desirable to make this pretty garden thoroughly symmetrical and uni-

form, it could be done, by sweeping out a similar semicircle on the other side, where now is the bed of Hollyhocks and Dahlias; and, of course, carrying the walk and grass margins farther into the brow of the knoll. The two wings, or semicircles, might then be planted in one style, and the main, or central part, in another.

We found the whole of this artistic place in the highest keeping, reflecting credit on all concerned. Without the ability to criticise, I may be pardoned for expressing the feeling, that there seemed to be an unpleasant abruptness in looking at once from the steep, close-shaven slopes of the terraces to the undressed beauty of the park. That would be greatly toned down by an intermediate grouping of shrubs and evergreens, in the way of pleasure-ground; and, for anything I know, this may be also resolved upon.

Mr. Hood, whom we had seen at the kitchen garden, but who had been called away on business, met us on leaving the flower garden; and in walking back to the kitchen garden, he showed us some specimens of fine timber in the park,—such as Turkey Oaks, nearly 100 feet in height; Luecombe Oaks, of great size; Evergreen Oaks, from eighty-five to ninety feet in height,—one with a diameter of head of sixty-six feet, and stem sixteen feet in circumference at three feet from the ground; another, the diameter of the branches seventy feet, and circumference of stem twenty-six feet at three feet from the ground. Not the least interesting, however, in the way of fine specimens, were—a fine old Yew, in the churchyard, near the flower garden, about thirty-six feet in circumference near the ground, and at six feet or so from the ground dividing into eighteen large limbs, each like a tree, the diameter of the head of the branches being between fifty and sixty feet: and at no great distance, in an open position, two of the finest Cork trees I ever saw, the height of one being, I presume, nearly sixty feet, and the other fully fifty feet; circumference of stem of one about sixteen feet, and the other about twelve feet.

The kitchen garden is unfavourably situated on the two slopes of a dell, with a small stream running down its centre; but fruit and vegetables seemed, nevertheless, to be perfectly at home, and in first-rate condition. On a part of one of these slopes were clustered some very useful pits, covered with glass; and one of these was filled with large, strong, healthy, Pine plants. This pit was heated chiefly by a tank beneath, close covered, as we understood, by slate. In such circumstances, provided the tank is secure, and the slate carefully bedded, I entertained the opinion, that the heat from such a tank would be pretty well as dry as from an iron pipe. With all these conditions, however, secured as much as possible, Mr. Hood assured us, that he could not keep this pit dry enough in winter; and that the more heat he gave, the more moisture did he get in his atmosphere; and that this moisture became so excessive, that he could not depend on starting his fruit as he wished. He had, therefore, a pipe for top heat, placed all round, and even then had doubts if that would thoroughly effect the desired remedy. This, to us, was quite an exceptional case. Have any of our readers met with a similar instance? I have known several such cases, when the tank coverings were loose, but none before, when securely fastened. The plants looked as if they would throw heavy fruits. Fine fruit were then swelling. It was only in winter the difficulty was experienced.

Farther down the slope a platform terrace was formed, on which was placed a neat, commodious gardener's house, and the chief range of forcing-houses, with a small templed conservatory in their centre, supplied with Oranges and Camellias, so dazzlingly dark green in their foliage, that the leaves might almost have supplied as good a looking-glass to Narcissus as the pool of water at which he fell in love with himself. These houses were mostly supplied with pits in the centre, and walks round them, and were furnished with heavy crops. In the one end,

the Black Grapes were finely coloured; in the other end, the berries, though equally well swelled, were not so high coloured, which I thought might be partly owing to large, lofty specimens of Magnolia, at no great distance from the front of the houses there.

Plunged in one of these pits, in the middle of the house, was a large pot, containing the roots of a bush Stanwick-Nectarine tree, the wood in beautiful condition, the foliage healthy, large, and green as Leeks; and having several dozen (I forget now how many) beautiful fruit, large, and swelling freely, and not one showing the least disposition to crack. Mr. Hood had previously been equally successful. He told us, that so far as his experience went, the Stanwick would not stand much forcing in the earlier part of its growth; but that, after it commenced swelling freely, it liked a greater and a more uniform temperature than it generally could receive, either on a wall, or under an unheated glass-case. I have had no chance of proving this myself; but this example would tend to show, that a little extra and regular heat was necessary to swell the epidermis of the fruit, to give free room for the swelling inside; and that when a sudden check was given to the outside swelling, the expanding juices inside found a vent for themselves, by cracking the outside. Without the presence of some such conditions, I do not recollect seeing this fine fruit free altogether from the tendency to cracking, or splitting; not but that many fine fruit might be got from a tree,—though some were thus disfigured. Here, every fruit seemed perfect.

As already hinted, in front of these houses, on a grass plat, was a row of old *Magnolia grandiflora*, and the *Exoniensis* variety, more than twenty feet in height, and both varieties blooming profusely. Anywhere but in these southern counties, these would be worth going some days journey to see. Their old gnarled stems demonstrated that they had outlived many a generation of gardeners. Were it not for the ability to think, and the power to express and act upon thought, man would be a very pigmy beside specimens of trees and shrubs. This terrace is bounded by a wall, the coping being on a level with the wall bounding the grass plat; and this wall was occupied with Peach trees, chiefly in a very healthy, fruitful condition. I presume they would be covered in spring, as, getting so far down the slope, they must be more subject to fogs and hoar frosts, than if placed higher on the slope. I understood it was in contemplation to cover at least a portion of this wall with glass.

Here we nearly missed what, to us Northmen, was one of the finest horticultural treats we had seen. On the top of the slope opposite the houses, noticing a long row of something covered with netting, we were delighted to find bush-tree Figs, producing abundance of large, excellent fruit. Many had been gathered, many were ready to gather at the end of August, the rich juice hanging from the cracks in amber-like beads, and many were swelling freely. The wood was kept thin,—was strong, but firm, and very short jointed. The plants looked as if they had stood there many years, and would stand for generations more. There were kinds I had not before seen. Perhaps the *Brown Turkey* was as good as any, for free bearing and excellence of flavour. Many specimens of this and other kinds were exceedingly fine. The plants receive no protection whatever. The netting was used to keep the birds at a distance, or not a single fruit would be got for the table. If some daring, cunning marauders found their way in, they were hastily driven to either end of the net, where, getting into a bag, they were easily captured. A gardener feels as much, about the melody and the poetry of the feathered songsters, as any class of men, or women either. But let them encroach too much on his fruit, and he begins to find that his organ of destructiveness swells to bursting point. A gardener once asked his lady employer, "if he might not shoot and destroy the vermin?"—"O yes, Mr. B.; but what are the vermin?"—"The birds, Madam! the birds!"—"Oh!

the birds, Mr. B.! the birds! the beautiful birds! the sweet birds! No—no! How could you think of being so cruel, Mr. B.? Net, if you like; frighten, if you like; but don't shoot the sweet birds." I question if any gardener, just at the time, would see much beauty in the prettiest yellow-billed blackbird, when feasting on his best *Elton Cherries*, or the largest of his *Queen Strawberries*, destroying and pecking twenty times more than he was able to devour. We fear that, like Mr. Hood with his Figs, he would be too apt to give a short shrift to the invading thief.

We shall ever look back to the few hours we spent at Mamhead as bright spots in our recollections.

R. FISH.

ROSES BLOOMING LATE IN AUTUMN.

SOME remarks having appeared in a late number about Roses then in bloom, I took pains to go to-day (Nov. 16) round the Rose quarters in Mr. Epps' nursery, at Maidstone, and found the following fully in bloom. I would remark, however, that the ground is considerably elevated, and the subsoil limestone, covered with a strong, friable loam. These circumstances are, no doubt, favourable to late blooms of every kind, as well as of the Rose. On the contrary, in Mr. Epps' nursery, at Ashford, which is in a level country, the Roses are all quite out of flower. Whoever, then, has a rosery on an elevated situation, may plant the same sorts of Roses, and expect blooms late in the autumn.

ROSES IN BLOOM, NOVEMBER 16th.

Gloire de Dijon	Devoniensis
Comte de Paris	Bourbon Queen
Souvenir de Malmaison	Aimée Vibert
Dupetit Thouars	Solfaterre
La Biche	Safrano
Comte de Nanteuil	Mrs. Bosanquet
Armosa	Abicot
Duchesse d'Orleans	Sir J. Paxton
And several others in bud.—T. A.	

THE COTTAGER'S KALE—HARDINESS OF LIBOCEDRUS CHILENSIS.

SOME five or six weeks ago, Mr. Charles Turner, of Slough, was advertising, in the *Gardeners' Chronicle* (with the Editor's opinion and recommendation), seed of "the Cottager's Kale." Last spring, I purchased from Mr. Turner a packet of this seed, so highly commended. It was sown and tended with due care, but it has turned out a parcel of the greatest rubbish that ever man put in his garden. Had I been singular, I would have thought some accident had occurred, whereby the seed had become mixed; but I know of several cases as bad as my own, both in Northumberland, Durham, and Yorkshire. There are no two plants from the seed alike: some are like the old Rag Jacks, others a bad cross between Curled Greens and Brussels Sprouts, others appear to be a cross between the Purple Cabbage and Curled Greens; but the whole are worthless. Now, thinking there might have been some mistake in the seed sent, I wrote to the Editor, giving a similar description to that above, stating that I was surprised such an advertisement should go before the public, from a tradesman in Mr. Turner's position; but, seeing that he was puffing it off again, I considered it time to ask for an explanation, or warn the public against the imposition. The Editor of the *Gardeners' Chronicle* took no notice of my communication, although I appended my name and address in full; so that I have been compelled to have recourse to your good self, and beg that you will insert this letter as early as possible, either to elicit explanation, or to warn the public. If tradesmen in Mr. Turner's position, and men of Dr. Lindley's high standing, persist in such proceedings, where are we to look for protection? I am satisfied that both these gentlemen could endorse what I have written, had they only the manliness to come forward.

Tell your correspondent "FRANK GRANT," that I have had the *Libocedrus Chilensis* standing unharmed by frost for the last two winters, although the *Cupressus Lambertiana* has been cut down to the ground. My residence is at Gateshead Fell, three miles from Newcastle, with west aspect open to the north, but well sheltered from the east. Soil a strong loam, over yellow clay and sandy shale.—JOS. SWAN.

GLASS STRUCTURE NOT FIXED TO THE LAND.

I OBSERVE, in THE COTTAGE GARDENER, some inquiries about portable greenhouses, and especially portable orchard-houses; and as I am not without some experience in this matter, I have thought it right to communicate with you.

I have now completed a set of houses, consisting of stove, greenhouse, intermediate-house, orchard-house, bedding pits, &c., all on the portable system,—such as would, I think, defy all the legal talent in the three kingdoms to claim them as fixtures for a future incumbent.

They stand entirely above and on the ground, without post, stay, or prop, below the ground level. In fact, I sometimes, in joke, ask my friends to come and see my large "handglasses," as—with the exception of the important items, weight and size—they are as portable as a handglass.

They are entirely made of wood, iron, and glass, without one single brick, except those used in setting the boilers.

I will proceed to describe the orchard-house more minutely, as that seems to be the text on which your homily is based.

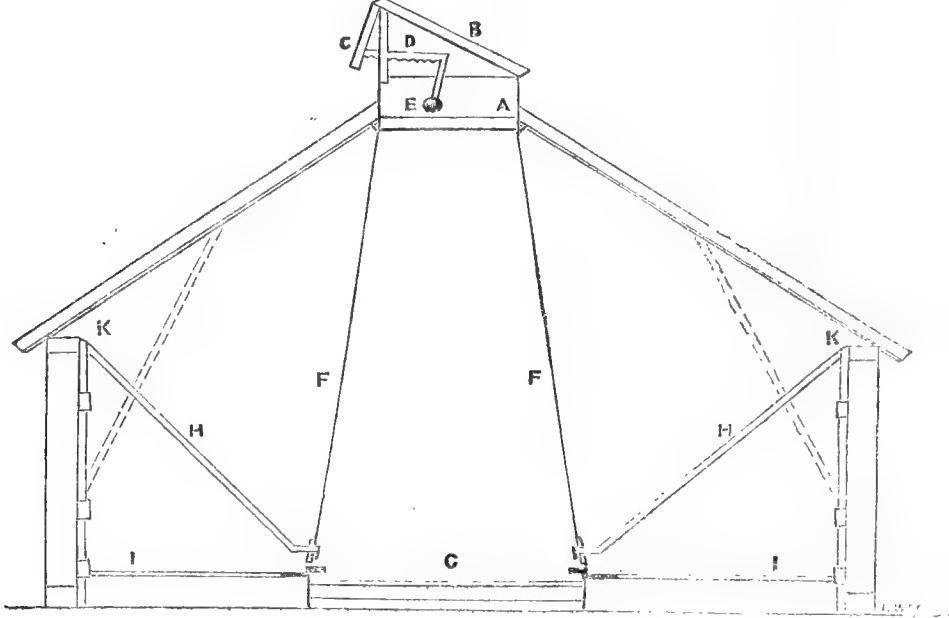
This house is forty feet long, fifteen feet wide, ten feet high to the ridge, four feet high to the eaves, and a span roof; and I would engage to take the house down, move it any distance within twenty miles, set it up, and be at work again, trees and all (they are in pots, of course), in a fortnight. It is entirely put together with screw-nuts, or with screws commonly called "coach-nuts," with coarse thread and square head. So that you can turn the

screws out, however tight with putty and paint, by means of a spanner. The ends of the house are in one piece, half of which is glass. Each side is composed of three pieces, two of them sixteen feet long, and the third eight feet long: each is complete in itself, with oak sill and deal plate, &c., boarded with thin deal boards, with open joints.

The roof (span) is in sashes, each eight feet square (rather too large); no rafters; sash-bars fourteen inches apart; sashes fixed, the lower ends resting on the plate, the upper ends on a piece of framing running the whole length of the house;—A carrying the short sash B, and the shutters (C) opening all at once by means of the lever D, fixed on a gas-pipe E, running the whole length of the house. The frame (A) is supported by iron posts or pillars (F F), which are screwed on an oak sill (G), resting on the ground, not *below* it. This sill is about four feet long, and is kept in its place by the tie-rods (shown in the sketch) running across the house just above the ground.

You ask whether the roofs of such houses can be constructed without supports of any kind between the wall-plates. I think not, economically. It might be done by an expensive and somewhat cumbrous system of trussed rafters. But what occasion is there for this, when a simple post or prop, *on*, not *in*, the ground, answers every purpose.

The annexed is a sketch of the roof-supports, tie-rods, braces, &c., of my orchard-house. The walk is in the centre of the



ouse, and the borders on each side; consequently, the diagonal braces (H H), and the transverse tie-rods (II), do not interfere with the convenience of walking up and down the house.

However, if it were thought desirable to have a border in the centre (in fact, I must do this, as my trees are rapidly growing too tall for their stations), the tie-rods (II) could be cranked down, so as to allow the path to go over them, and the braces (H H) could be altered as shown by the dotted lines; for, of course, the house cannot wrack, without altering the angles (K K), which the subtending braces (dotted lines) quite prevent, as I have proved, by constructing a small model.

These systems of props, braces, &c., occur at intervals of eight feet; thus, there are four of them altogether. They are very light, neat, and strong, and are just the things for training up Vines, &c.

I am afraid I have already wearied you enough with this long epistle, or I would describe more fully the various details of this house, and also of my stove and greenhouse, all of which are constructed on the same principles; though, of course, I found the latter much more difficult, as the sides are so much higher, and, therefore, more difficult to brace and keep steady. However, I have persevered, and succeeded, in spite of the jeers of my friends, who often ask me whether my houses are blown down or not, which way uppermost, &c.

I will write again, if you like, describing fully these houses, with their fittings (completely portable), stages, floor, tanks, pipes, and shelves; in fact, everything except the boiler,—a retort of Thomson's,—which, of course, is set in brickwork. Here again though, the pipes are connected to it by means of flanges and nuts, so as to take off in a moment without breaking anything.—F. E. ROBINSON, *Stonesfield Rectory*.

Another communication on the same subject is as follows:—

SEEING an article in THE COTTAGE GARDENER respecting the construction of orchard-houses, so that they may be removed by the tenant, independent of the landlord, it occurred to me that this might be done very simply. The sides might be constructed in pieces ten feet long, by the height required. These could be secured together by screw-bolts. The common bed-screw would do well for the purpose. The ends I would make in two pieces, and fix in the same manner. This frame could be kept in its place by stakes in the ground; the top part of the frame, forming the wall-plate, could be stayed either from the inside or out, best to suit the situation. The sashes could rest on the plate and purline, and, coming together at the top, would receive a coping-board. These would be all kept secure by hanks and staples. A house thus formed would cost but little more than one on Mr.

Rivers' plan, and could be taken down (say, sixty feet long) in an hour, without injury to any part. If the lower plates could be set in loose bricks they would last much longer.—WILLIAM YOUNGMAN.

HERALDRY APPLIED TO FLOWER GROUPING. SOWING TRITONIA UVARIA.

"GREENHAND" misunderstood the nature of the credit I meant. It was my money and personal effects which I staked on the issue, and all my worldly property could be conscientiously sworn to as under ten thousand pounds. But say that I was worth ten thousand, every farthing of it should be forfeited, if in three years *Rosebud* did not take the public taste before two other seedlings, which had prizes given them on purpose to recommend them more strongly than *Rosebud* to the said public; or else, as a correspondent suggested at the time, to enable someone to buy *Rosebud* from the raiser much below its fair market value, which I can hardly believe. Now, when "GREENHAND" made his money reckoning against me, I had not a farthing I could call my own to meet him; and when I found that all my money was locked up for the next three years, I looked about for other means for raising the wind. It is a bad wind that does not blow fair to somebody: three weeks after I blew the bellows, *Tritonia uvaria* fell 45 per cent. in value, somebody having advertised it at 16s. the dozen, as I was told, but I did not see the advertisement. But I have seen that which is nearly as good. I met Mr. Veitch soon after the wind business, at an old-established nursery firm, where we both drank Her Majesty's health. He told me that next spring they are going to advertise *Tritonia uvaria* at 18s. per dozen. It was up to 30s. the dozen when I spoke of it at 5s. Another large nurseryman has since told me that he had 5,000 plants of it ready for sale; that my experiment on it was well worth five pounds; and that I was over the mark, if there was a good demand for it.

That being so, I can afford to accept the quits cry; but still I think the balance of the account, between the extra price on the plants and the real value of the experiment, is but fair and just; and it strikes me that heraldry was a clever move on his part, to direct me from the point of prompt settlement. There is no getting over these city men,—they are up to every move. He knows my predilections for Rob Roy and the feudal times, and nothing sooner than heraldry could stir up my promptings. But applying heraldry to planting and colours I cannot resist: I cry quits too. Money is dross, after all; but colours are colours, and I shall take special care to study what "GREENHAND" has said on the heraldry of planting beds.

Not a word he wrote jarred on the evidence of my senses while reading it, and that is a good sign of anything one reads for the first time. But, to make sure of the benefit of his quits, I shall tell him at once how to treat his seeds and seedlings of *Tritonia uvaria*. I only learned the mode myself this very season. Last spring, I spoke of seeing this plant coming up from seeds at the Wellington Road Nursery as thick as grass, and very much like lawn grasses at that stage. I also had an hour's talk with Mr. A. Henderson, at the beginning of October, and I inquired diligently of him how these seedlings turned out. Nothing could be easier: February, March, or April would do to sow them, according to one's convenience: the earlier they are sown, the better plants they make before next winter. The same convenience that would do to get up a stock of bedding plants from spring cuttings would also do for sowing these seeds in February; and they might be sown under a handglass, on the Cucumber ridge, at the end of April. Sow them thin, and give them the same treatment as seed-pots of blue Lobelia, Cobaea, Cineraria, Calceolaria, Petunia, or even Fuchsia.

After they are up, just watch them from day to day; and as soon as you see the grassy leaves not able to bear up their own weight, be sure the place is too hot for them,—they want more air, or a cooler place. After a while, they will be long enough to handle; then is the best time to part them, and have them potted into nursing pots: the best size for the pot is No. 48, and it will hold just twelve plants comfortably, at equal distances all round the side. The same soil as for blue Lobelias is the best,—that is, a very sandy peat, or very sandy leaf mould and peat, or light loam; at any rate, let it be just one half sand. Keep them on the blue Lobelia treatment till all the Dahlias are planted out; then plant them out also, by drawing the ball asunder into two equal parts: six plants in each half is the best way of dividing

them. Give them plenty of room, a warm corner, and rich light soil. Through the summer, occasionally water. They ought to be all taken up early in October, for two reasons,—to stop them growing later, for fear of the frost, and to give them more room for two more years without disturbing them. Between the rows, cover with coal ashes before winter; and, if it comes very hard, throw some straw over them, as they do on the Radish beds. They are of the nature of Cape bulbs, and some are foolish enough to force Cape bulbs with hotbeds and forced heat: such people will be sure to damage their seedlings with too much heat. It is all very well to pretend not to believe in witchcraft, but on what other principle can you account for a whole generation going daft on the culture of half-hardy bulbs like these, though these are not actual bulbs? My grandmother had a red cow that was bewitched, and I am quite sure witches are as plentiful now as they were then; but I hope they will not influence new beginners in this line, like "GREENHAND"; as for the old ones, nothing but grim death can ever take the spell off them.—D. BEATON.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 103.)

[D. signifies that varieties so marked are to be used only for the dessert; K., for kitchen purposes; and C., for cider-making. Those marked K.D. are applicable either to kitchen or dessert use.]

APPLES.

Speckled Golden Reinette. See *Barcelona Pearmain*.
Speckled Pearmain. See *Barcelona Pearmain*.

Spice Apple. See *Aromatic Russet*.

SPRINGGROVE CODLIN, K.—Medium sized, conical, broad at the base, and narrow at the apex. Skin greenish yellow, tinged with orange on the side next the sun. Eye closed. Stalk short. Flesh greenish yellow, soft, sweet, slightly acid, and agreeably perfumed. An excellent summer kitchen apple. In use from July to October.

SPRING RIBSTON, D. (*Baddow Pippin*).—Below medium size, roundish, or rather oblate, ribbed on the sides, and knobbed round the apex. Skin yellowish green, covered with dull red next the sun. Eye large and open. Stalk very short. Flesh greenish white, crisp, juicy, sugary, with an aromatic flavour. A first-rate dessert apple. November to May.

Stagg's Nonpareil. See *Early Nonpareil*.

STAMFORD PIPPIN, D.K.—Large, roundish, inclining to ovate. Skin yellow, with a slight tinge of orange on one side. Eye small and half open. Stalk short. Flesh yellowish, firm, but quite tender, crisp, and very juicy, with a sweet, brisk flavour, and pleasant aroma. December to March.

Stettin Pippin. See *Dutch Mignonne*.

STRIPED BEEFING, K.—Large, roundish, and somewhat flattened. Skin green, changing to greenish yellow, and almost entirely covered with broken streaks and patches of red. Eye large and open. Stalk rather short, deeply inserted. Flesh yellowish, firm, crisp, juicy, and pleasantly acid. A very fine culinary apple. In use from October to May.

Striped Holland Pippin. See *Lincolnshire Holland Pippin*.

Striped Joanneting. See *Margaret*.

Striped Quarrenden. See *Margaret*.

STURMER PIPPIN, D.—Medium sized, roundish, and flattened. Skin yellowish green, and brownish red next the sun. Eye small and closed. Stalk long and straight. Flesh yellow, firm, brisk, sugary, and richly flavoured. January to June.

Sudlow's Fall. See *Franklin's Golden Pippin*.

SUGARLOAF PIPPIN, K.—Medium sized, oblong. Skin fine light yellow, dotted with green; becoming almost white when fully ripe. Eye small. Stalk long. Flesh whitish, firm, crisp, and very juicy, with a pleasant, sweet, and sub-acid flavour. Ripe in August.

SUMMER GOLDEN PIPPIN, D.—Below medium size, ovate, and flattened at the ends. Skin pale yellow in the shade, tinged with orange and brownish red next the sun. Eye open. Stalk thick and short. Flesh yellowish, firm, very juicy, with a rich vinous and sugary flavour. A delicious, early dessert apple. End of August.

Summer Nonpareil. See *Early Nonpareil*.

SUMMER PEARMAIN, D. (Autumn Pearmain).—Medium sized, conical. Skin rich yellow, thickly dotted with brown dots in the shade, and striped and mottled with orange and bright red next the sun. Eye small. Stalk short, fleshy at the base, at its union with the fruit. Flesh yellowish white, crisp, and richly perfumed. October to January.

SWEENEY NONPAREIL, K.—Above medium size, roundish-ovate. Skin bright green and russety, sometimes with a tinge of brown next the sun. Eye small and half open. Stalk long. Flesh greenish white, firm, crisp, and powerfully acid. An excellent sauce apple. January to April.

SYKEHOUSE RUSSET, D.—Small, roundish, compressed. Skin greenish yellow and russety in the shade, brownish red next the sun. Eye open, deeply sunk. Flesh greenish yellow, and richly flavoured. An excellent apple, and deserves general cultivation. November to February.

Thorle Pippin. See *Whorle Pippin*.

TOKE'S INCOMPARABLE, K.—Large, ovate, broad, and flattened at the base. Skin yellowish green, with a tinge of red next the sun, and a few crimson streaks. Eye large, nearly closed. Stalk very short. Flesh yellowish, firm, crisp, tender, juicy, with a pleasant acid. November to Christmas.

TOWER OF GLAMMIS, K. (Carse of Gowrie).—Large, conical, and distinctly four-sided. Skin deep sulphur yellow. Eye closed and deeply set. Stalk an inch long, deeply inserted. Flesh greenish white, very juicy, crisp, brisk, and perfumed. November to February.

Transparent Pippin. See *Court of Wick*.

Travers' Pippin. See *Ribston Pippin*.

TULIP, D.—Below medium size, ovato-conical. Skin, all over deep red, except on the shaded side, where it is golden yellow. Eye open. Stalk short. Flesh greenish yellow, crisp, juicy, sweet, and sub-acid. November to April.

WADHURST PIPPIN, K.—Above medium size, sometimes large, conical, and angular. Skin yellow, and mottled with brownish red on the side next the sun. Eye closed and deeply set. Stalk short and stout. Flesh yellowish, crisp, juicy, and briskly flavoured. October to February.

Walmer Court. See *Northern Greening*.

Waltham Abbey Seedling. See *Golden Noble*.

Warter's Golden Pippin. See *Golden Pippin*.

Warwickshire Pippin. See *Wyken Pippin*.

Week Pearmain. See *Wickham's Pearmain*.

Weeks' Pippin. See *Court of Wick*.

Wellington. See *Dumelow's Seedling*.

WHEELER'S RUSSET, D.—Medium sized, roundish, compressed, and irregular. Skin pale russet in the shade, bright brown next the sun. Stalk short. Eye small. Flesh greenish white, firm, and brisk flavoured. November to April.

WHITE ASTRACHAN, D.—Medium sized, conical. Skin pale yellow, or almost white, with faint streaks of red next the sun. Stalk thick and short. Eye small. Remarkable for the transparency of its flesh. August and September.

WHITE PARADISE, D. (Lady's Finger, Egg Apple).—Medium sized, oblong. Skin smooth, fine deep yellow, marked with broken streaks and dots of red. Eye open. Stalk an inch long. Flesh yellowish, tender, crisp, sugary, and pleasantly flavoured. October.

WHORLE PIPPIN, D. (Thorle Pippin).—Below medium size, oblate. Skin smooth, shining, and glossy, entirely covered with fine bright crimson, except where shaded,

and then it is clear yellow. Eye large, half open, and frequently rent. Stalk very short. Flesh yellowish white, firm, crisp, very juicy, with a pleasant, refreshing flavour. August.

WICKHAM'S PEARMAIN, D. (Week Pearmain).—Medium sized, conical. Skin yellow, and almost entirely covered with bright red next the sun. Eye half open. Stalk half an inch long. Flesh greenish yellow, tender, crisp, juicy, sugary, and highly flavoured. October to December.

WINTER CODLIN, K.—Large, conical, five-sided, and ribbed. Skin smooth, yellowish green, and sometimes with a tinge of red next the sun. Eye very large and open. Stalk very short. Flesh greenish white, tender, juicy, sweet, and sub-acid. September to February.

WINTER COLMAN, K. (Norfolk Colman, Norfolk Storing).—Large, round, and much flattened at both ends. Skin pale yellow, spotted with red on the shaded side, and lively red next the sun. Eye small and open. Stalk short and deeply inserted. Flesh firm, crisp, and briskly acid. An excellent culinary apple. From November to March.

Winter Greening. See *French Crab*.

WINTER MAJETIN, K.—Large, roundish, terminated at the apex by five prominent crowns. Skin green, tinged with dull red on the side next the sun. Eye small and closed, set in a deep, narrow, and angular basin. Stalk long and slender. Flesh greenish white, firm, and of an agreeable acid flavour. This is a very desirable culinary apple. In season from November to March. The tree is a very prolific bearer.

WINTER PEARMAIN, K.D. (Old Pearmain).—Large, conical, somewhat five-sided towards the crown. Skin smooth and shining; greenish yellow on the shaded side, but covered with deep red and red streaks next the sun. Eye large and open. Stalk short. Flesh yellowish, firm, crisp, juicy, and sugary, with a brisk and pleasant flavour. December to April.

WINTER QUOINING, K.D. (Winter Queening).—Medium sized, abrupt-conical, five-sided, and angular at the apex. Skin pale yellow, almost entirely covered with red. Eye small and closed. Stalk half an inch long. Flesh greenish yellow, tender, sweet, and perfumed. November to May.

Wollaton Pippin. *Court-pendu Plat*.

Wood's Huntingdon. See *Court of Wick*.

Woodstock Pippin. See *Blenheim Orange*.

WORMSLEY PIPPIN, K.D. (Knight's Codlin).—Medium sized, roundish, narrow towards the eye. Skin pale green, becoming deeper towards the sun, and marked with dark specks. Stalk an inch long, deeply set. Eye deeply sunk, placed in a plaited basin. Flesh white, crisp, and highly flavoured. September and October.

Wygers. See *Golden Reinette*.

WYKEN PIPPIN, D. (Arley, Girkin Pippin, Warwickshire Pippin).—Small, roundish, and compressed. Skin pale yellowish green, with dull orange next the sun. Stalk short. Eye small. Flesh greenish yellow, tender, very juicy, sweet, and richly flavoured. December to April.

Wyker Pippin. See *Golden Reinette*.

Yellow Harvest. See *Early Harvest*.

YORKSHIRE GREENING, K. (Coates', Yorkshire Goose Sauce).—Large, roundish, irregular, and flattened. Skin dark green, striped with dull red next the sun. Stalk short and thick. Eye closed. Flesh white, and pleasantly acid. One of the best kitchen apples. October to January.

(To be continued.)

RETARDED VERSUS YOUNG POTATOES.

It is almost needless to mention here, that of all the various garden productions which conduce to the welfare of the cottager, as well as of the more affluent, none continue in a really serviceable condition longer than the

Potatoe ; for, like corn, and some other things, it is made to do service from the first of January to the end of December. But, unlike bread, it presents us with more forms than one. A young Potatoe and an old one are often widely different in their eating qualities. The latter are, doubtless, the most useful. But young Potatoes are so much looked after by some that many attempts have been made to have them at all times of the year. And some have accomplished this by a sort of clandestine way, which is meant to cheat the palate into the belief that old Potatoes are young ones.

The way this is done is, by retarding the growth of certain kinds of Potatoes (for some kinds answer better than others) until the season is too far gone for their ripening, and then to call the half-grown, half-matured produce "young Potatoes." Some people, who are willing dupes to this deception, fancy these retarded Potatoes as good as new ones, and "young ones" they are called. Be this as it may, it is only necessary here to describe how it is accomplished.

Unlike the seed of a vegetable, or tree, the tubers of a Potatoe will not keep much longer than from the period of its storing away to the following July ; and before then its efforts to shoot have deprived it of much of its stored-up juices, so that by then it does not weigh more than one-half its original weight, and goes on decreasing (the shoots being supposed to be broken off as it makes them), until at length it becomes finally exhausted, and a withered object is all that it presents. But, supposing it to have been planted in the ground in the ordinary way by the beginning or middle of July, a crop of more or less abundance is the result. The growth being rapid, the produce for a time is, doubtless, "young Potatoes" in the full sense of the word. But supposing them to be dug up immediately, and another set of old Potatoes put in,—say, by the first of September,—the growth is not so rapid then, and the produce has no chance to harden, and become what is called ripe, before dull, cold weather sets in. Hence, they are called young Potatoes all the winter, and are dug up as wanted from the cold ground. Certain kinds in certain soils eat tolerably well grown this way ; but, generally, the system is less practised than it was twenty years ago ; the desire to have really young Potatoes having superseded that of being satisfied with an article differing from those in ordinary use at the time, which "retarded ones" really are. Nevertheless, some even give a preference to the latter, and it is only right and fair that their taste should be duly honoured. And the retarding process has some advantages, of which the possessor of a small plot of ground will, no doubt, be glad to avail himself, if the article wanted be Potatoes of the kind mentioned.

As an example, let us suppose a quantity of Potatoes stored away in a cellar, of the *Lapstone* or *Fluke* variety, or any other (for each have their particular merits and adaptability to certain places). These being stored away in a cool cellar, in spring may have the shoots picked from them as they are made, and may be frequently turned over. Nevertheless, new shoots are formed, which, when of an unwieldy and entangling length, may be taken off again, the root each time being so much lighter, that by the end of June a quantity may be planted, or even sooner. These grow rapidly, and are fit for use a short time after planting. A fortnight or three weeks after, another crop may be planted from the same original stock ; and others in succession, until the beginning of September, after which those produced are so small, that they are hardly worth cultivating in an ordinary way. All these plantations must be from the old original stock, varied only, if necessary, by the kind in most esteem in the neighbourhood for such a purpose ; as it is difficult to give general instructions in this matter, soil and situation exercising so much influence on this head. These repeated plantings, to furnish Potatoes in a half-grown state, effecting their object in so short a time in the hot

months of summer, the same ground may be made to produce several crops of Potatoes the same year ; but, in a general way, it is better to change it each time ; although I have heard of some parties having had four or five crops of Potatoes on the same ground in one season. However, it must be evident to everyone that changed ground would be better. In hot, dry weather, copious waterings will be of service.

It is difficult to recommend a variety that will answer in all places. A few years ago, *Chapman's Kidney* was much recommended for this purpose ; but it did not answer at all in some soils. I have even seen *Regents* do better, so much depends on soil, situation, and other circumstances. One thing, however, must be borne in mind, that those which are planted late in summer, to take up during the following winter, ought to be on dry, light ground, if possible. Otherwise, worms and other enemies will prey on the young crop. In severe weather, they must be covered up, to keep them from the frost,—a quantity for a few days consumption being previously taken up and kept in damp earth in a cool place.

The other points in their culture will suggest themselves to everyone. They need not have quite so large a space between the rows as those planted in spring for the important crop, and in very dry weather they will require frequent and abundant watering. It is only proper to observe here, that the sets planted ought to form a supply grown in the ordinary way. But instead of the small ones being reserved for that purpose, as is usually the case, only the large ones are fit for very late work : the small ones, becoming weakened by repeated sproutings and removings, are no longer possessed of sufficient vigour to insure a fair, good crop. Hence, it will be seen, that this mode of obtaining "young Potatoes" is, to a certain extent, extravagant. But, to those who like the article, this may be of small importance.

Next week, however, I hope to say something about young Potatoes, properly so called. J. ROBSON.

THE ROSE.

I, AS well as others, have already, in THE COTTAGE GARDENER, written largely on the culture of the Rose ; and, therefore, to its pages I refer the reader who may possess that work from its commencement ; yet, as many of our friends may not have the volumes containing these instructions, I will endeavour to give a few condensed remarks, which will at least be seasonable. Now is a good time to perform several operations, and also to purchase Rose trees. I shall, therefore, dilate a little on what is necessary to be done now, and give a few notices, with names of the best new sorts, and a selection of such as have been proved to be first-rate varieties, which every cultivator forming a collection may safely order.

Soil.—The question is often asked,—What is the best situation and soil for the Rose? I answer,—Roses do not thrive well in either a too wet or a too dry situation. In low, swampy ground it will be necessary to drain effectually, and to raise the ground for the Roses above the general level of the place, concreting the position for each tree, so that the roots cannot get down into the wet subsoil. It will not do to stick them in, giving manure, &c., in such a situation, in the vain hope that perhaps they may grow. On the other hand, if the Rose must be grown in a shallow soil, with a gravelly subsoil, or perhaps rocky limestone, equal care must be bestowed to counteract the bad situation. In such a case, the subsoil must be excavated, and the soil deepened, or in dry summers the leaves will be covered with mildew, and the trees will neither grow nor flower well. These evils may be avoided, by, as I said before, deepening the soil and mulching the surface with short manure, or even a covering of pebble stones or moss. Where, however, the soil is a rather strong, friable loam, from a foot to eighteen inches deep, with a subsoil of well-drained clay, the Rose will thrive with ordinary care, and may be planted largely.

In all these cases skill and judicious management is necessary. At this season of the year, as soon as the leaves have fallen, examine every tree. Such as appear sickly, and are making but

little wood, should be immediately lifted, the soil taken out a yard square, and fresh loam, mixed with some well-decomposed dung, put in its place, and the tree replanted immediately, well staked and mulched. If the trees grow very luxuriantly, and do not flower freely, lift such also, and prune their roots rather severely. This root pruning will act upon the Rose exactly the same as on a too luxuriant fruit tree—that is, it will bring it into bearing blossoms, the great object for which the Rose trees are grown. In such luxuriant-growing trees, the addition of fresh rich soil should be avoided, till the trees are tamed of their rampant growth.

Pruning.—At this time of the year, the only pruning necessary will be to shorten very long, rambling shoots, and to cut away any dead wood there may be in any of the bushes. The borders should be manured and dug over, and all made neat and tidy. The *Tea-scented* and *China* varieties should be protected from severe frosts. The dwarf varieties may be sheltered with the fronds of the common Brake or Fern, or even with branches of the Spruce Fir. All pot Roses intended for forcing should be potted immediately and placed under shelter, and sets brought into a gentle heat in succession. Climbing Roses may be pruned in, and nailed, any time from now till February: pillar Roses should also be pruned, leaving the long shoots fully two-thirds of their length, and cutting out all small spray. Walls covered with Roses are, when well managed, exceedingly beautiful: but in such a situation the soil becomes exhausted, when it ought to be renewed, as much as possible without injuring the roots. Two or three good soakings of liquid manure would be of great service, especially in dry situations:

Having given these few brief cultural remarks, I will proceed to give the lists alluded to above:—

NEW ROSES—1858.

HYBRID PERPETUALS.

Abbé Feytell. Deep rose, shaded with lilac; globular, very large, and full.

Duke of Cambridge. Bright, vivid rose. A great improvement on *Madame Fermion*.

Evêque de Nîmes. Deep, vivid crimson. The petals are disposed in the form of a rosette, which gives it a very unique appearance. This Rose is most decidedly the gem of the season.

Gloire de Lyon. Rich, velvety, purplish crimson, intensely dark, in the way of *Arthur de Sansalles*. It is, however, thought to be superior to that excellent variety.

La Belle Egamé, or *Madame Damét*. Rosy lilac, beautifully cupped. A neat, pleasing variety.

Louise d'Autriche. Light crimson. A large, showy rose.

Madame de Bessé. Pink, with rosy centre, in the way of *Madame Knorr*.

Madame Vigneron. Pale pink, large, and very double. A very double and fine new Rose.

Madame Van Houtte. Light pink, most beautifully cupped; of exquisite form.

Marie Thierry. Deep rose, shaded; an expanded Rose; large, full centre, and very double.

Monsieur de Montigny. Very rich, deep Rose, shaded with purple; large, and double. An abundant bloomer, and the largest Rose of the season.

Queen of Denmark, called also *Etoile de Marie*. Pale blush, shaded with pink; very stiff petals; and first-rate form, in the way of *Madame Vidot*.

Thomas Rivers. Rosy lilac, shaded like *Colonel Foissy*, but greatly superior, being larger, with finer shaped cup, bud, and flower.

BOURBON.

Madame Comtesse. Deep flesh-colour; finely formed. A seedling from *Louise Odier*.

SELECTED OLDER VARIETIES.

HYBRID PERPETUALS.

Adelaide Fontaine. Deep pink; very large.

Cardinal Patrezzii. Deep, velvety crimson.

Comte de Nanteuil. Deep rose. Superior to *Coupe d'Hebe*.

Duchess of Norfolk. Deep, rich crimson. Fine.

Duchess of Orleans. Deep rose. Fine form.

Ernest Burgmann. Pink shaded.

Général Castellane. Bright carmine.

Général Jacqueminot. Crimson scarlet.

Général Pelissier. Pale lilac. Extremely large.

General Simpson. Bright carmine. Fine form.

Jules Margottin. Vermilion colour. Rich, and well formed.

La Fontaine. Light crimson expanded.

La Ville de St. Denis. Deep rose. Large and full.

Lord Raglan. Crimson scarlet. Fine.

Louise Odier. Bright pink. Vigorous habit.

Louise Peronny. Bright pink. Very large and full.

Madame de Cambacères. Rose colour. Free and constant.

A fine rose.

Madame Hector Jacquin. Deep rose. Large and globular.

Madame Knorr. Deep pink, with rosy centre.

Madame Masson. Deep crimson purple. Large and full.

Madam Rivers. Pale flesh. Very beautiful.

Madame Vidot. Light pink; cupped.

Mademoiselle Alice Leroy. Delicate pink.

Marquis de Murat. Lilac rose.

Paul Duprez. Crimson, tinted with violet.

Souvenir de la Reine d'Angleterre. Bright rose colour. A magnificent large Rose.

Triomphe de l'Exposition. Bright crimson. Very fine.

William Griffiths. Bright lilac rose. Very good.

I can confidently recommend all the above, as being very superior kinds, worthy of cultivation.—T. APPLEY.

GLEANINGS FROM THE GENUS HELIANTHUS.

ON rising from the perusal of the Compositeæ, in De Candolle's "Prodromus," I felt that there was not a genus more difficult to deal with, or less understood by botanists, than that of *Helianthus*. Here, De Candolle has quoted from other authors almost *verbatim*. One would have thought that so famous an author would have put in some master-stroke of his own. He has divided them into—*Disco atro-purpureo*, *Disco luteo*, *foliis omnibus oppositis*, and *foliis superioribus alternis*; quoted from other authors; and overlooked the fact, that the foliage can rarely be relied upon; for very often in those "all opposite" the upper are alternate, as in *divaricatus*, *decapetalus*, and several others; with his other divisions of the "upper alternate," we may very often say they are the reverse. Now, there is a much surer and better way of dividing them. There is one thing among composite plants that is too often ignored, and which, of itself, will often form a good distinction, and that is the *chaff*—*Palæa*, as it is termed. Among the species of the present genus, De Candolle has not altogether lost sight of it: but he might have made it a grand characteristic, by putting one division with *Palæis integris*, or *Palæis 3-dentalis*; and, further on, the leaves *ovate*, or *lanceolate*; and, lastly, the stems *rough* or *smooth*. A person who understood the matter would say,—here is an opportunity for an able hand to reduce this unwieldy mass to something like shape. But one thing must be said, and that is, he who undertakes this should have almost every species growing under his eye,—an object not so easily attained in these days, when the cultivation of herbaceous plants is so much neglected. Nevertheless, I should not like to see, at the head of each division in the genus *Helianthus*, a definition of four or five lines in length, but a few words plain and to the point. On the whole, De Candolle is not sufficiently concise. How different with the famous Linnaeus, who, generally speaking, constituted his divisions in few words: with him to make his object as clear and plain as possible in the shortest space was a subject of primary importance.

Among the species of *Helianthus* are some of the finest ornaments for autumn, and why they should be so much excluded from the shrubbery, or flower garden, is a matter of great surprise to me, and not easily accounted for. As they are strong-growing plants, they make the best appearance at the back of the flower-border, or in the shrubbery, where they make a noble display, the profusion of their bright yellow flowers contrasting well with the various shades of green on the shrubs. They are additionally valuable for flowering when almost all the bedding plants are over, and the eye then rests in agreeable relief on their bright masses of flowers.

The following should be grown in every garden, as they are some of the best:—

Helianthus atro-rubens.—This is a dwarf species, rarely attaining the height of four feet. It is a plant of loose habit, if left alone; but this may be easily obviated by taking up the roots in spring, just when they appear, and planting them together, when the plant will look truly beautiful for the small trouble bestowed upon it. Its flowers are large and showy, with a dark purple disc.

Helianthus angustifolius.—A rather dwarfer plant than the

preceding, with linear foliage. This is not of loose, but of compact habit. Its flowers are medium-sized, with a dark purple disc; a showy plant, but liable to be killed by severe frosts. It is a very scarce plant, seldom, indeed, to be met with, and is the *Rudbeckia angustifolia* of some authors.

Helianthus Maximiliani.—This is a noble perennial, having an abundance of bright yellow flowers. It is taller than many others, but makes up for it in the vast profusion of its showy flowers. I think it questionable if this is not the finest of all the *Helianths*.

Helianthus doronicoides.—A plant not nearly so tall as the preceding, nor producing so many flowers; but, for all this, it is a showy species, though seldom seen; and is one of the latest at flowering, being very often in full beauty at the end of October and beginning of November. This is the *Helianthus pubescens* of some authors.

Helianthus decapetalus.—One of the oldest of the genus, and a most beautiful one withal. The stems are in general very little branched, except at the top, where its branches form a corymb. It is most profuse flowerer, and continues long in perfection.

Helianthus longifolius.—This is a most distinct species, both in habit and appearance. Its stems and leaves are of a purple colour; the former are tall, smooth, and few flowered; the latter are long, lanceolate, and entire. The flowers, too, are smaller than many others, which gives this species quite a distinct appearance. It appears to be a very rare species.

Helianthus cornifolius.—This is a most desirable species, with flowers of a sulphur yellow, produced in great profusion, which gives it a lively as well as a beautiful appearance. The foliage of this is rather larger than that of several other species. I am constrained to say, it is very rare.

Helianthus tomentosus.—Another very remarkable plant, covered with hispid hairs, which gives it quite a different appearance. It flowers most freely, and is very pretty. Many authors have confounded *mollis*, *pubescens*, and this together. They are, however, quite distinct.

Helianthus frondosus.—This rare plant has scarcely been known in this country. Indeed, De Candolle has put it among his *species non satis nota*. It approaches nearest to *decapetalus*, but, in my opinion, is quite distinct. The average number of petals seems to be seven, I have never seen them exceed eight. I received seeds of this, by accident, from America. It is a showy species.

Besides the above, I have many other species, all most showy ornaments for the flower garden at this season of this year; and I do sincerely hope that they may be more cultivated than at present, for they are all worthy of extended and general cultivation.—W. HOLCROFT.

QUERIES AND ANSWERS.

PRUNING CLIMBING ROSES.

"I have a *Blairii* No. 2 and a white China Rose growing on a house with a south-west aspect. Should they now be cut in, and to what extent? The *Blairii* has made very long shoots, but is very bare at the bottom. The above are three-year old plants, and have not been much cut."—N. B.

[You must cut *Blairii* down to very near the ground, if you mean it to make a fine plant. The China Rose must not be pruned till the beginning of April; and March will be time enough for *Blairii* No. 2, as it seems so bare at the bottom. This Rose, and all other Roses, for climbing or training, ought to have every inch of growth they make, for the first three years after planting, cut down close to the ground. Suppose one shoot the first year twenty feet long, cut it to four eyes at the first pruning. Second year, suppose the four eyes made four shoots, each fifteen feet long, cut two of them to two eyes, two to four eyes; one shoot to seven feet, and the last shoot to ten feet. In the next two years get rid of the seven and ten-feet pieces, and have all strong and healthy from the bottom.]

WINTERING YOUNG FUCHSIAS.

"A subscriber to THE COTTAGE GARDENER will be glad to know the best method of keeping four-foot high Fuchsias during the winter. Should she cut them down, or let them die down, and cut them in the spring? Also, she would be greatly obliged

by a test to detect milk suspected of being adulterated with water."—H. L. E.

[Such young Fuchsias had better not be cut down to the ground till they show signs of growth in the spring; but if they are bushy, the side branches may be cut back now to give more head room. We do not know how to detect water in milk. There are various lactometers, or instruments to show how much cream milk contains.]

DEFORMITIES IN PINE APPLES.

"Will you be so kind as to inform me what causes some of my Providence Pine Apples to grow without crowns? Perhaps my treatment, in some respects, may have something to do with the defect. Some few of my Montserrats swell a little below the crown, which gives the fruit a very ugly and deformed appearance. In one instance, two suckers (if it is right to call them so) have made their appearance on the sides of a crown. Would you kindly say whether I ought to remove them? I am also troubled with a great many gills on my plants. I am told it is a proof they are not well grown. Yet many reach 4 lbs. each. Will you please to say what causes so many gills?"—W. W. B.

[We would recommend you to read Glendinning and Mills' two little works on the Pine Apple. There seems no great reason for the inference, that your plants are not well grown. Such things will happen at times, under the best treatment; but if generally the case, something will be found wrong. We have not grown Pines lately, but we will give the results of our previous experience, which you can take just for what you imagine it to be worth.

1. *Providences without crowns*.—We generally found it to be chiefly the result of two causes. Keeping the house and roots rather dry and cold when the fruit was starting, and allowing water to remain at such a period for any length of time in the centre of the plant. Much importance should be attached to preventing water lodging there in winter. If the atmosphere is at all moist, and there is no method for preventing the water condensed on the glass from dropping on the plants, much care will be required in drawing it out of the centres of large plants with a syringe, or a long tin tube, which we have often had done with the mouth. Air should be given, so that, in unison with the sun, when shining, the plants may be dried.

2. The irregular swelling of the *Montserrat* would almost lead to the suspicion that the plant and fruit had been subject to sudden changes, as respects moisture and temperature. If only one or two are thus affected, and the others in the same place are regularly swelled, then the blame might rest on the state of the roots, and the treatment they received; but we have had such cases, and could not, by examination, satisfy ourselves as to the cause. A check at the time of starting will frequently show itself during the whole time of the swelling of the fruit.

3. *Suckers on the crowns*.—Some kinds are more subject to what is called cockscomb-crowns than others. The *Evvile* frequently comes so, and also the *Providence*. The great preventives are—plenty of light and air even in winter, and keeping up the requisite regular temperature. Even then, however, these cockscomb-crowns will come at times. If this is not what is meant, but the sucker-like appendages are more like suckers than the crown, and are at a short distance from it, and the crown is pretty large, we would cut them off, not pull them out, as that would be likely to injure the fruit; and we would do this almost as soon as they could be got at. If the suckers are at all large, it would be best to leave them alone; at least, not pull or twist them out, but cut them over. Unless when quite small, it is as well not to meddle with them.

4. *Gills on the plants*.—We have sometimes thought that two or three gills at the base of the fruit, and perhaps two inches or so beyond it, were ornamental rather than otherwise. They can easily be prevented getting larger, by scooping out the centre with the point of a small gouge or sharp knife. If the gills have been allowed to get any size, we would prefer doing this to removing them altogether. If there are several along the fruit-stalk besides, it is best to take them all away when young. So far as theory goes, we should say take them all away when young, so that the whole strength from the stem may pass into the fruit. When, however, of two plants very similar, and fruit much the same in size, one with gills all removed, and one with two or three small ones close to the fruit allowed to remain, but deprived of their growing points, it would be difficult to decide, from results,

which practice was the best. If the crown was of fair size, we would remove all gills as soon as they appeared. What say our many Pine-growing readers? Under good, regular treatment, gills do not often appear. But the best cultivators have them at times.]

VINE MIDLEW: ITS PREVENTION AND CURE.

In a late number of THE COTTAGE GARDENER, I noticed a correspondent asking for information respecting the best means of destroying the Vine mildew. I must admit I am astonished,—after the advice given in these pages, by some of the best practical gardeners of the day,—that in the year 1858, the question should be asked,—how to destroy the Vine mildew?

Had this question been asked some twelve years since, I could have sympathised with the inquirer. About that time, or a little later, I had my late Grapes attacked with mildew, which spread very rapidly over the whole house. Sulphur, at that time, as a cure, was not so well known as it is at the present. Neither was it applied in the proper way. At that time the disease was quite new to me; but, as something must be done, I determined to ask advice on the subject. I did so, and, I can assure you, some very curious receipts I had given me. However, I selected two which I thought most likely to succeed. The first, to dust sulphur, by means of a pepper-box, over the parts; the second, with a small brush, to paint the stems of the bunches with sweet oil. With these two receipts before me, I determined at once to set to work. But what was to be done: I being a bachelor, and boarding in the house at the time, could not boast the possession of a pepper-box, and I was too far distant from town to fetch one. My only resource was to ask our good-natured cook, who, after sundry inquiries respecting the use of it, lent me one, on the express condition of returning it, clean and sound, as I then found it.

I had scarcely dusted one-half of the bunches, when my worthy employer opened the viney door, and, seeing me very busy with the pepper-box, of course asked what I was doing. I turned to him, thinking he would be pleased to hear my answer, and politely informed him that I was destroying the mildew. "Indeed," said he, smiling, "and destroying the Grapes also, I presume. At least, they will not be fit to look at, after sulphur being dusted over them in that way, much less will they ever be fit for my table." But I assured him I could, with the use of the syringe, wash the berries perfectly clean. But, alas! such was not the case. It is true, I stayed the mildew, but spoilt the appearance of my Grapes; and I had strict orders not to apply sulphur to the remaining bunches, but to let them take their chance (a very poor one, too, thought I). However, I was determined to try my second receipt on the bunches I had not dusted with sulphur. So I got a small brush, and carefully applied the sweet oil. This, likewise, had the desired effect, but, like the sulphur, did not improve their appearance, or their flavour for the dessert-table.

The following season I was again troubled with the same disease, but I am happy to say, that that time I effectually destroyed it, without the least injury to my Grapes; and, I am proud to say, it has never done me one pennyworth of damage from that time up to the present. I have, since living at Worcester, seen mildew make sad havoc amongst the graperies; and, I am pleased to say, I have had the credit of saving many fine crops.

I trust the advice I have given below—although not new—will never be forgotten, while it has the desired effect; and I also hope your correspondent will act on the advice given, and I can assure him mildew will soon be an entire stranger to his graperies. Nothing is more simple than preventing the Vine mildew; and, I am pleased to say, it is within the reach of every man to stay its progress. During the lifetime of my employer (the late Sir Offley Wakeman, Bart.), I had a good opportunity of testing the truth of what I have stated below, were I had Grapes hanging nearly the whole year round: the first were usually ripe by the end of April, and the last generally hung until the middle or end of March.

Again and again has sulphur been recommended for destroying mildew on Vines, and I believe there are no two opinions with respect to its efficacy, when properly applied, and in time. Notwithstanding this, however, I have, during the past season, witnessed splendid crops of Grapes entirely destroyed by mildew, almost to a bunch. I, therefore, naturally asked, why sulphur had not been applied? And the answer was, that every bunch

had been dusted over and over again with it, as well as syringed with sulphur water, but without the slightest benefit; and, in consequence, all faith in sulphur was lost. It had not, however, been applied in time, nor in the proper way, for, although dusting over the berries immediately the disease is perceived would, as I before stated, stop its progress, yet, used in this way, it has not only a very slovenly appearance, but the Grapes are sure to taste of it, more or less.

Now, as sulphur will destroy the mildew after it has attacked the Vine, why not apply it as a preventive, which, surely, at all times, is better than a cure? I would not recommend dusting the bunches, or syringing the leaves with sulphur, or anything that has an unsightly appearance; but the method I would advise is simply the one practised by myself, with the best results—viz., washing my hot-water pipes or flues regularly over every fortnight with sulphur, during the forcing season, when the pipes or flues are sufficiently hot to evaporate it. This is not only a preventive of mildew, but a sure check to our great enemy—the red spider. And, from some years experience, I am certain, if the above be properly attended to, no one will have any reason to complain of mildew.

In proof of the success of the above, in the spring of 1852, I visited a gentleman's garden, a few miles from London, where he had lost his crop for two successive years, and had every appearance of doing the same again. Sulphur had been applied to the bunches, but the mildew had spread over the foliage, and even the young wood was attacked. In the course of conversation with the gentleman and his gardener—a reader of this paper—I told them I thought it was yet possible to destroy it, provided they would clear the house of the plants. This was done, the fire lighted, and the flue made hot. Sulphur was then mixed up in a pail, and applied to the flues by means of a brush. The application was repeated twice a day for three successive days, and by the fourth day the disease had altogether disappeared. The berries that had been very badly attacked were cut out, and the remainder ripened and did well; so that, by the aid of sulphur applied to flues sufficiently hot to evaporate it, a good crop was secured.

I never remember seeing but two other houses of Grapes so badly affected with mildew, as the one I have just mentioned. One was at Croome, and the other at Gaines, near Worcester. With respect to my own late vineyries, I had fires lighted occasionally, with a view to evaporate sulphur, by way of prevention, in the manner I have already mentioned.—EDWARD BENNETT, Gardener, Perdiswell Hall.

TO CORRESPONDENTS.

PRESERVING STOVE FERNS IN WINTER (*Comet*).—You have some stove Ferns, and only a greenhouse, viney, and peach-house to winter them in. It is possible they may exist through that season, providing you keep them tolerably dry, and in the warmest part of your house; but as soon as your viney is started, place them there; and when they begin to grow repot them, and give tepid water in small quantities. You do not mention the species. We should be glad to know what species you keep alive, and which die, as it may lead to the useful knowledge that some hitherto supposed stove species should be put amongst those that will bear greenhouse treatment.

CLIMBERS FOR A SHADED NORTH WALL (*C. F. O.*).—There is not a fast-growing evergreen climber to be had, that would grow near an Elm tree at the north side of a house. *Spiranthes latifolia* might be got to do the work, if you are in a district where it would not be hurt by frost. We have often said that we cannot answer such questions without knowing where the plants are wanted. Ladies never forget to mention where they write from; gentlemen very often do; and doing so is "just like them." Ivy seems your only resource.

PROPAGATING PASSION-FLOWERS (*A Darlington Subscriber*).—Your plant is the one with suckers; any of the suckers with roots to it will make a plant; and the best time to separate them is in April; but cut down the top of the sucker to within three or four eyes of the roots. But we repeat our disapproval of the plan entirely. But if you resolve to use seeds, sow the seeds in a warm bed in the spring, and treat the young plants as you would any seedlings of bedding plants, shifting them from pot to pot till they are strong enough to be planted out for good,—some in July, and some to be kept in pots the first winter, and housed like Fuchsias.

WINTERING VERBENAS (*B. P.*).—The best way to keep Verbenas over the winter, without greenhouse or frames, is to make cuttings of them early in August, so as to have the young plants stout and full of roots before winter; then to put eight or ten of them in 48-pots before the end of September. The soil should be as good and loamy as for pot Geraniums, but very well drained; and the pots kept in the open air all day long, when it is not frosty, or rainy, and taken in-doors at night. We have seen them so with cottagers twenty years back, and their plants were more healthy than our own, with all kinds of glass shelters. The only secret is, to have them young and early. Old plants are useless.

AGAPANTHUS UMBELLATUM (*Idem*).—The Agapanthus must not be allowed to dry; but it does not require water often; one good watering once a month will do till March, twice in March, and four times in April; and

from May to September it would grow in a pan of water. Common Cactuses and Aloes will do very well in your cold house; but the *Cactus truncatus* and *spectabilis* are not common; and none of them like to be under 45° in winter; however, they often are. Keep yours in the warmest part of the house, and give but very little water till the sun is high again.

SUPER-PHOSPHATE OF LIME (A Constant Subscriber).—It is composed of phosphoric-acid and lime, is a constituent of all cultivated plants, and is more beneficial than bone-dust, from which it is made, because it is more soluble in water. You may apply it in the spring and summer to any growing crop, at the rate of 9 lbs. to a square rod. Its benefit does not extend beyond two crops.

PAMPAS GRASS (W. F. B.).—Keep the Pampas in the same pots till March, and in a cold pit, if you have one, or in the greenhouse, in frosty weather, and out in fine. Dig out a pit one yard across, and two feet deep, and fill it with fresh sandy loam, and a little very rotten dung, just what one would like for an early bed of Radishes, or Horn Carrots. Plant the Pampas in this, and water once a week all through the summer. The best place for it is on the grass in front of evergreens, or the back part of a plant border, next to a Portugal Laurel. The dark evergreen is to set off the beauty of the spikes.

DARK CRIMSON CLIMBING ROSE (Idem).—There is no dark climbing Rose. There have been many inquiries for such a Rose, and the Rose-growers ought to have raised one before this.

LIBOCEDRUS CHILENSIS (A Subscriber from No. 1).—Mr. Beaton said that about London, and south of it, this Conifer is of hardiness similar to that of the Laurel,—that is, that it usually survives the winter,—but occasionally a severe winter cuts it down. He added, that if the Yorkshire nurserymen told you it was not hardy in your latitude, you had better trust to them, unless you choose to try for yourself whether it is so. This you do it courteous to call "unmitigated stuff;" but we consider it sound and truthful information, and we shall not descend to follow your example, by applying the descriptive epithet to your note which it entirely merits. You will see in another page that the *Libocedrus Chilensis* is found to be hardy at Newcastle-upon-Tyne.

ALLAMANDA SCHOTTII SHEDDING ITS BLOSSOM-BUDS (A Young Beginner).—We have seen it shed its blossom-buds from the mass of roots getting dry, though enough of moisture was given to prevent the leaves flagging. A very high temperature, especially at night, will also sometimes produce the same result.

NAMES OF FRUITS (II. C., Croydon).—No. 1. *Beurré de Capiaumont*. 2. *Brown Beurré*—requires a wall to ripen it. 3. *Winter Nelis*. December. 4. *Beurré de Rance*. December to April. 5. *Crassane*—requires a wall to ripen it. (C. S.)—No. 11. *Colmar d'Arenberg*. 13. *Fusse Colmar*. And the other *Easter Beurré*. (*Broughton*).—Your Apple seems to be the *Old Golden Pippin*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

- NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.
 NOVEMBER 30th and DECEMBER 1st. GLASGOW. Sec., Mr. R. M'Cowen. Entries close November 17th.
 DECEMBER 7th and 8th. NORTH DURHAM. Secs., R. C. Coulson, J. T. Duncan, and T. Wetherell. Entries close November 22nd.
 DECEMBER 8th. WILTSHIRE. Sec., F. W. Phillips, Devizes. Entries close November 30th.
 DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.
 DECEMBER 29th and 30th. BURNLEY AND EAST LANCASHIRE. Sec., Angus Sutherland. Entries close December 10th.
 JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.
 JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.
 JANUARY 20th and 21st, 1859. LIVERPOOL.
 FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs., R. Teebay, and H. Oakey.
 FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.
 FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

N.B.—Secretaries will oblige us by sending early copies of their lists.

HOW THE JUDGES PROCEED AT BINGLEY HALL.

"AND who," said the student to Asmodeus, "are those four men, I see walking merrily through the streets so early in the morning?"

"They are the Poultry Judges," was the answer. "I would see them at their work," said the student.

In a moment the two were on the glass-roof of Bingley Hall.

Cheerfully they enter on their work,—many and hearty are the greetings between them and familiar faces met with but once in the year, and then on this occasion. Yes, they are hearty, for it is a poor soul that does not expand, when, after twelve months have passed with all their changes and gaps, there is not an enlarged feeling at the sight of those yet in health and strength, who have not been seen since the last shake of the hand and good bye,—*last year*,—and who deserve respect.

And now each produces a book and pencil; and then it is proposed to take a general view before the serious operation begins; and all start together. But each follows his own fancy, and in

ten minutes they are scattered about. In ten minutes more each is looking for the other, and each is eager to remind the other that the days are short and light is precious; and so the work begins. They are seasoned to it, and there is nothing of trepidation, or indecision, about them. Hats are taken off, and wide-awakes, or caps, take their places. Heavy great-coats are laid aside, and wrappers substituted. What a metamorphosis.

"Come, come," says the most impatient; "let us begin." Another attempts a repartee. "That there will be plenty of time to get tired before night." It does not tell, there is too much of truth in it: there is seldom much truth in a telling joke. Then it is seen that there remains no one in the place to overlook, and overhear any remarks that may be made. Men appointed to take out the birds remain in another part of the building till they are called. Now for the first class. Forty-nine pens. The four divide, one to the beginning, one to the end, and the other two to different parts of the class. Each takes a solitary review of it, and then all meet. Every Judge has marked in his book those pens he thinks most deserving of distinction; and now for the comparison. All have fixed on the prize pen, and there is no doubt. Now for the other prizes: there is more discussion here; and, at last, all go together to view all the marked birds. The awards are nearly settled. Then the birds must be handled. It is, in truth, a searching ordeal; and now some of the favourites will lose their intended honours. Close examination reveals little defects that were unseen before, and every pencil is at work. Now all have been handled, and the men retire. The class is finished. "Pity," says one, as he passes one of his pens, "that hen has two sides to her face." "If I could take the cock from one, and the hens from another, I could beat them all," says a second; and so it is done. Then follow chickens, then hens, then pullets, and all go through the same observation.

When six classes are finished, then the awards are given in at the office. Here are four or five writing, as for life; but the moment the Judges enter everything stops, and fresh books are opened, wherein to register them. Careful men, those Judges; old staggers. I warrant the decisions. Everyone looks for a seat; he knows he will want all his strength and energy. Does anyone doubt it? Look at that Dorking class,—160 entries, and many of them as much alike as possible.

With a half sigh, one of them goes to the end of it. Where on earth is he going? All up that side, down the other, round that corner. Ah! at last he is at the end. Half an hour passes, and they are not yet comparing notes. Now they are seeking each other, and at last they meet. They look serious. "Well," says one, "what have you done?"—"I have marked half the class."—"So have I." Now they compare. They have twelve first-prize pens. No talk yet of going round together: each must get rid of some of his pets. Now compare. Twenty pens are marked by all the Judges. Walk round, gentlemen, and get rid of some of them. They must. Now call the men to catch them. There are forty pens to handle. Nothing is spoken before the men; but birds are handed from one to the other with sapient looks, and fingers rest on certain spots. Numerous are the notes now made. Now crooked breasts and humpy backs are discovered; now faulty claws, and numberless little defects that are unseen to the casual observer. The twenty pens are reduced to ten; but these again must be reduced to five. And now the men are in requisition again, in the same class; and then the Judges walk hurriedly and together from pen to pen. They take out birds themselves now; and though we cannot hear what they say, still they are talking fast; and once more they go from pen to pen. Then they consult, and then one more look, and one more comparison. Ten minutes' close conversation; every man with his pencil on his book; a few marks, and the great prizes are awarded. Even after this, so anxious are they, that they take one more walk. Then they draw a long breath; the most numerous class is judged, but it has occupied more than an hour.

The Cochins do not take as long. But here there appears to be some difficulty in deciding, so many pens are good; but their defects, when they have any, are more easily discovered. But there is marching and counter-marching, though not so much handling. The Judges begin to look tired, and they look at their watches with some anxiety. Will they go and sit down? No; refreshments are brought, and they take them standing, or walking about. They don't joke much now: we have only heard one for an hour; that was in the Silver-pencilled Hamburghs, when it was proposed to pass them over, merely saying, all the prizes were taken by Mr. E. Archer.

But what is that class where each seems to scan the birds more closely than he has done before?—Spangled Hamburgs! How they handle every bird,—examine every feather. With what an air of contentment does that Judge pass that bird to his fellows! How different from the contempt with which he returned the other to his pen. They are very long over these classes; but they are done.

They get quickly over the Polands. In many cases they take only one bird: they pass their hands along the back, and shake their heads. We suppose they are deformed.

The day is getting on, and they have a mass of work before them. Still nothing is done in a hurry, and every class is handled and examined as at first.

Look at that array of single cocks. How many birds are taken out! And now the Bantams. Every class seems to require more careful judging than its predecessor. And the Turkeys, and the Ducks, and the Geese; and so they go on, till, in the evening, four weary men, covered with dust and dirt, go into the office to give in their last awards. They throw themselves into chairs, and are heartily glad the day is over.

But when the night comes their pillows are stuffed with cocks, and they do nothing but crow. Whether awake or asleep, all they hear is the crowing of cocks, from the smallest Bantam to the most stentorian Cochin-China.

So far as those on the roof could tell, this is the way the Birmingham Show is judged; and they agreed that, from the pains that were taken, even losers should be well satisfied.

INFLUENCE OF THE MALE BIRD.

THERE is an answer to "AMATEUR" in your "Letter Box" of November 2nd, which is, I fear, calculated to mislead him. You say, speaking of the influence of the male bird,—"After a fortnight, probably, you would be sure to have your hen free from the strain you wish to avoid."

My experience is, that it lasts much longer. I once lost a cock. The hens were confined in a pen, and I had every egg dated when it was laid, as I wished to try the experiment. One that was laid five weeks after the death of the cock produced a good, strong, healthy chicken. Not only was the hen in safe confinement, but there was no other cock in the yard.

You are perfectly right about Turkeys, and many good breeders do not keep a cock at all. They either hire or borrow one for a day or two, or they send their hens to a yard where there is one. I will prove to you the system answers. I once had a solitary hen Turkey: she was sent to me at the beginning of March. She was much in my way, and, being tiresome to the hens and chickens, she was shut up in a loft used only for a little straw. She there laid a nest of eggs, and brought out eleven poult. Hens and Turkeys are anatomically alike in these organs. I, therefore, advise "AMATEUR" to separate his fowls in the early part of the next month.—SALOP.

[We are much obliged by this communication. Our own experience led to the conclusion which we stated, but we never tested the fact so closely as was done by "SALOP."—ED.]

EXTRA PRIZE AT BIRMINGHAM FOR PARTRIDGE COCHIN-CHINA CHICKENS.

I HAVE no doubt you are aware, that, through the exertions of Mr. Charles Felton, of Erdington, near Birmingham, a subscription was entered into, by sixteen of the principal breeders and admirers of Partridge Cochin poultry, to give two extra prizes for chickens of this beautiful class at the next Birmingham Poultry Show, with the distinct understanding, that each party should exhibit birds that were not only *bond fide* his property, but actually his *own breeding*. Having always been of opinion, that the breeder was, in all cases, the proper party to receive the honours resulting from the production of any improvement, either in animals or poultry, and looking upon this as the first acknowledgment of the principle (at all events, as connected with poultry), I became a subscriber, and looked forward to the competition with considerable interest. During the past few days, I have heard a rumour that the "*own breeding*" clause was not going to be strictly enforced; and as this will, in my opinion, do away with very much of the actual benefit arising from the competition, I shall feel much obliged by your alluding to the cir-

cumstance in your valuable paper next week, and urging, with your usual ability, the propriety of abiding strictly to the original engagement, and so increasing the number of breeders of one of the most useful and beautiful breeds of poultry.—FAIR PLAY.

[We forwarded this communication to Mr. Hewitt, and this is his reply, so that there can be no misunderstanding of the conditions. Indeed, we have seen them in print:—

"The facts as narrated by 'FAIR PLAY' are strictly correct. The matter was first mooted during my return journey by rail, from judging the Wellington Poultry Show, on February the 16th, of this year. I was then requested to award the proposed additional sweepstake premiums at Birmingham coming December meeting, if it should so happen that the allotment of the general prizes did not at once settle this question likewise, which I at once promised to do gratuitously, if this improbable contingency should occur; improbable I say, as the competitors were decidedly the best known breeders of Grouse Cochins in the kingdom, and nothing save some 'new man' taking all the general premiums could render my interference requisite. It was at this time expressly stipulated, that such Grouse-coloured Cochin chickens 'must be *bred* by the exhibitor,' purchased fowls being inadmissible; and a printed circular afterwards distributed is confirmatory of this condition as imperative in all cases.

"My opinion is, therefore, very decided—viz., that any subscriber exhibiting chickens for these particular prizes, not actually bred by himself, is really practising wilful deception to obtain success; and that not only ought he in common justice to forfeit the premium, if thus attained (however deserving the poultry he exhibited might be), but should also receive the richly-merited disgrace fraudulent conduct ever entails when discovered."—EDW. HEWITT.]

POINTS OF EXCELLENCE REQUIRED IN THE CANARY A CENTURY AGO.

IN looking over some old pictures, in a lumber-room, the other day, I found the portrait of a Canary bird, in oil colours; and on the back of the frame is pasted a written description of the bird, a copy of which I now send you, as it probably may amuse some of your readers who take an interest in the Canary. The spelling, &c., is retained.—CLERICUS.

"CANARIE BIRD"

Drawn after Nature from A Fine fancy Bird bred by Mr. White, of Hosier Lane. This Bird won the Prize at 4 different Shows in 1766.

"PRINCIPAL PROPERTYS."

- 1 Cap for Magnitude and Regularity.
- 2 Colour for Richness of Yellow.
- 3 Wings and Tail for Black home to the Quill.
- 4 Spangle for Distinction the Golden Preferable.

"SECONDARY BEAUTIES."

- 1 Pinnions for Magnitude.
- 2 Swallow Throat for Largeness.
- 3 Fair Breast regular.
- 4 Leggs for Blackness.
- 5 Hue for Blackness.

"NOTE."

That A Bird with two Pinnions shall take Place of A Bird but with One Pinnion if Posset of the 5 Principal Properties as good."

OUR LETTER BOX.

HARES AND RABBITS.—*Snow Wenger* will be obliged by being informed whether these animals will eat any of the following plants:—Scarlet Geraniums, Heliotropes, Calceolarias, Petunias, Feverfew, Anemones, and Ranunculus. Mr. Rivers' "Orchard House" is the best authority on the subject of which it treats.

SPURRED DORKING PULLET (*A Subscriber*).—There is not the slightest doubt that a Dorking pullet is a perfect bird, although she has a spur on each leg. It is common to the breed; and many who are in the habit of eating the best fowls of this class can recollect good, young, succulent, tender pullets, that have appeared at table with spurs, that some would declare to be infallible signs of old age. There is too much importance attached to spurs, as marks of youth, or otherwise. They belong to breeds, and to feeding. We do not mean to say, a long, sharp, fixed spur should appear on a chicken of four or five months old; but we have often seen an undoubted chicken with a premature spur, and have heard people express opinions that he was in the wrong class as a chicken, when there was not the slightest doubt of his youth. Those who cannot judge of age by any other rule will be constantly wrong. High feeding makes spur just as much as it induces growth in other parts of the frame.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	NOV. 30—DEC. 6, 1858.	WEATHER NEAR LONDON IN 1857.								Clock afterSun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R.ands.	Moon's Age.		
30	TU	ST. ANDREW.	29.894—29.762	47—28	N.E.	—	44 af 7	53 af 3	14 af 2	25	11 10	334
1	W	Andersonia sprengeloides.	29.904—29.793	48—32	N.E.	.02	46 7	52 3	30 3	26	...	335
2	TH	Acacia armata.	30.012—29.941	47—34	E.	—	47 7	52 3	47 4	27	10 24	336
3	F	Acacia juniperina.	29.751—29.712	43—33	E.	—	49 7	51 3	4 6	28	10 1	337
4	S	Acacia taxifolia.	30.025—29.904	55—25	S.W.	—	50 7	51 3	19 7	29	9 36	338
5	SUN	2 SUNDAY IN ADVENT.	30.242—30.116	53—27	W.	—	51 7	50 3	sets	27	9 12	339
6	M	Camellias.	30.296—30.119	56—49	S.	—	52 7	50 3	58 3	1	8 46	340

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 47.3° and 35.4°, respectively. The greatest heat, 59°, occurred on the 2nd, in 1828; and the lowest cold, 14°, on the 5th, in 1844. During the period 109 days were fine, and on 108 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

THE unusually dry weather, which we have experienced for some time past, has been very favourable for getting on with the work of manuring and trenching; and where such works are backward they should be pushed forward on every favourable opportunity, until every vacant piece of ground is supplied with dung where most wanted, and for principal crops, and deeply dug or trenched, laying it in ridges, the more fully to expose it to the beneficial action of the weather.

ARTICHOKE.—Finish winter dressing, by cutting down the large leaves, and digging the ground in a gradually sloping ridge over each row close up to the plants, leaving the hearts clear. Cut the late heads, if any, with long stalks; and if there are more than can be used at once, if the stalks are placed in sand, under cover, they will keep good for some time.

BEANS.—Sow a succession of *Early Mazagans* and *Long Pods* on a south border, or on some dry, sheltered quarter, in rows, about two feet and a half apart, and two or three inches deep. Some planted thickly together in a small bed, on a warm border, and protected with long litter, or any such like covering, in very severe weather, will be useful for transplanting in February or March.

CAULIFLOWERS.—Watch narrowly for slugs amongst the young plants, and keep them free from weeds and dead leaves. If any were planted, as advised, in pots, for the purpose of protecting them in severe weather, they must be carefully attended to and watered.

CELERY.—Continue to fully earth-up the advanced crops, and the others when they have made some growth. To be done only in dry, open weather.

COMPOST HEAP.—During frosty weather, it is advisable to turn over the frozen crust every morning, until the whole is exposed to the pulverising and grub-destroying influence of the frost.

ENDIVE and LETTUCE.—Take up on dry days, and store them in a dry, airy shed. They will keep better there than protected out of doors.

HERBS.—If any are wanted in a green state, they will require to be taken up with balls of earth, and immediately potted, and placed in a gentle heat.

ONIONS.—Keep the August sowing very clean from weeds. Examine the housed ones, and pick out any that decay. It is an old-fashioned, but good plan, to sere the tops of all that begin to grow with a red-hot iron.

PARSLEY.—As it is so frequently required, and liable to injury from severe frosts, or heavy falls of snow, it is worthy of being hooped over, and covered with mats; or some roots should be taken up, potted, and protected.

PEAS.—Sow some early sorts, for the chance of a crop.

WINTER CROPS.—When the weather is dry and mild, stir the soil amongst them.

FRUIT GARDEN.

Proceed with the planting of fruit trees, in mild, open weather; and, if the soil is old, give each tree a good portion of fresh loamy soil, or turf, about its roots.

STANDARD PEAR and APPLE TREES.—Root-pruning is recommended for all such trees as have made an over-luxuriant, and, therefore, an unproductive growth. Dig a trench two feet from the stem, all round, and cut some of the strongest roots,—particularly all tap roots,—which will induce a more fruitful condition. We give two feet as a general guide, but a great deal must be left to the discretion of the operator; as, of course, he will understand, that the distance from the stem must be more or less, according to the age and size of the tree, and that the larger the tree, the farther it will be necessary to keep from the stem in making the trench.

FLOWER GARDEN.

Except alterations and planting are in hand, there will be but little to be done here, beyond clearing up leaves, and putting the beds and borders into a clean, tidy state for the winter. This may be done, now that the leaves have all fallen, with the least possible delay. The leaves and sweepings of the walks being laid about the shrubs, and slightly covered with soil, to prevent them from being blown about by the wind, will be much better for the shrubs than digging amongst them. The walks should be frequently swept and rolled, so as to keep them clean and smooth. Turf will also require to be rolled frequently, to keep it smooth and firm, and to prevent its disfigurement by worm casts.

ALPINES to be protected from too much wet.

CARNATIONS and PICOTEES to be watered very sparingly, and to have all the dry air the season will allow.

PITS and FRAMES to be closed at nights, as they are now generally cold, and to be well covered with mats and litter when required. Look carefully over the plants, to give water when necessary, every fine day, and avoid watering them, if possible, in dull weather.

POLYANTHUSES and PINKS.—If young plants have been put out late, it is probable that they may be raised by the action of the late frosts; if so, as soon as the soil is moderately dry, fasten them in their proper places.

ROSES.—As the present mild weather is most favourable for planting, we would suggest to the amateur, who has room for them, to purchase a few first-rate sorts. The prices stated by several of the most celebrated growers must preclude having occasion to grow a second-rate sort.

WILLIAM KEANE.

CLAPTON NURSERY.

MESSRS. LOW AND CO.

I was told in St. James's Hall, that if I wanted to see the newest style of building and heating hothouses, I ought to go to Mr. Low's; that he had been putting up "a world of new glass, and heating with Muckle Meg." "Heating with what?" said I. "Oh! you have been writing about Inkerman, and surely you must know about your grandfather's Muckle Meg." Well, I was nearly up in a corner, but, all at once, I recollect seeing Muckle Meg in Edinburgh Castle. I recollect, too, that George IV., when looking at the crowds in Edinburgh, asked Sir Walter

Scott, "Where are the common people ; I can see none but gentlemen ?" "Sire," said Sir Walter, with great gravity, "they would all consider themselves gentlemen, too, if your Majesty would deign to restore to them their Muckle Meg." But His Majesty never heard the name before, and Sir Walter had to explain that Muckle Meg was an ancient Scottish cannon, which the English took in some battle, which I forget, and that the piece was lying uselessly in the Tower, in London, from that time till then. That led to the restoration of Muckle Meg to her rightful clan. But it seemed out of all conscience, that Mr. Low should begin cannonading at his time of life. Yet so it is, and the hottest work I ever saw done with cannon was at the Clapton Nursery. Munro's cannon boiler was fixed and fired there in earnest, and did the work so unlike other cannons, by saving the lives of thousands of plants from hurt and harm, that a second cannon boiler was ordered while the iron was hot ; and I have seen them both at work on new targets, in the shape of "a world of new glass" houses. "Bless you, Sir, they burns any mortal thing you likes to give 'em," as Sam would say. And the foundations for them need not be more than three feet deep below the level of the pipes.

The best proof of their efficiency, is the fact that one of them, which cost £8, does the work of four or five older boilers ; and that as soon as its power was proved, a second one, costing £5, was set to work in a new Camellia-house, which is a span-roof, north and south, 135 feet long and 15 feet wide ; also, an Epacris-house of the same shape and size,—say, 600 feet of four-inch pipes,—worked by a five-guinea cannon boiler, which burns "any mortal thing." These new span-roofed houses have no stages, only a three-feet wide path down the centre, and a raised bed on each side, surfaced with sifted ashes, to stand the pots on. The front is half of bricks, and the upper half of glass, but not in the usual way. The sashes are in one sheet of glass, four feet long and thirty inches high, and the kind of glass is Hartley's patent fluted. The roof is of the same, in panes eighteen inches wide and two feet long, all glazed like Mr. Rivers' orchard-house, of all "rafters and no lights ;" but here each side of the rafter is rebated to let in the glass, just like the common sash-bar, and no capping. The rafters are one inch and a quarter thick, and four inches deep, all fixed on one side : the other side is in sashes, and every other one moves up and down for ventilation. The paths are of Roman cement, one inch and a half thick, and are smoother than the glass ; and that kind of glass requires no shading. There are cross iron ties and upright supports to the roof, and the whole look as if they would last a thousand years. Therefore, there is no indication of divide and go, in this well-rooted firm, like some of our tenantry round here, who want hothouses as portable as camp stools.

In addition to the two long span-houses mentioned, there is a high lean-to house, 145 feet long and 14 feet wide. Also, a lean-to tan pit, for newly imported plants, all erected this last summer, and all heated by the two cannon boilers, and four-inch pipes. Thirteen pounds for the two boilers ! The whole heating apparatus, glazing, and carpentering, were executed and finished in first-rate style by Mr. Low's own men, so that he must have in his employ, painters, carpenters, glaziers, workers in iron, and a civil engineer ; and a very civil and obliging man he is, for he went round with me, and answered all my Paul Pryism with great patience and good humour. What I learned about the Fuchsias and bedding plants were from other heads of departments.

Mr. Stewart Low was engaged with a Prussian, or Russian, nurseryman. All that the father, and father-in-law showed, was a Malakoff, a recent building over the seed shop, where he, and some of his generals, probably, sleep in troublesome times, that they may see all that is going on below, inside and out ; and, as long as I think of it, I must tell the hundreds of good gardeners, who passed

through this emporium, on their way to supply cooks, and flirt with ladies' maids, that the long line of potting sheds behind the old Australian-house is now also heated by one of Weeks' best boilers, which heats all the glass and structures on that side of the place very efficiently. But water being up to within four feet of the surface, and Weeks' boiler requiring deeper setting, they are not so handy here without going to more expense to make the places for them water-tight.

Hartley's fluted glass is a splendid article for all plant-houses ; and having seen so much of it on these new houses, and the healthy appearance and beauty of the vast variety of plants under it, I am now perfectly satisfied it is the best kind of glass for garden purposes. The houses being all fixtures, I got no new ideas on portable houses ; but the rafter-like system, in sash-bars, is not nearly so handy to take to pieces as the old system of lights. The ventilation to make a glass-house cooler than the open air, in calm, sultry weather, is not yet well understood by most hothouse builders.

I saw Mr. Eyles, of the Crystal Palace, at St. James's Hall. He, too, is coming out with a span new house, on a new system, which I must see, ere I can report progress on portabilities.

The wholesale trade of this nursery is, perhaps, the largest in the kingdom, and that is the secret why all new plants are "let out" as soon as they can be propagated. When Mr. Low is asked, why he let out such a plant till he had enough of it to bring him in a fortune ?—he answers, the chances are just the contrary ; but by giving the trade a share, as it were, in his new plants, he can always sell them as soon as they are fit. No plant ever hangs on his hands, and his business must have doubled within the last dozen years. In common things, his annual sale and propagation is enormous :—7,000 Epacris, 7,000 Ericas, 7,000 Camellias, and Azaleas nearly the same. Conifers, of which he sells more than of any other family, are now in their different stages, from seeds, cuttings, and graftings, occupying 500 lights, none of them under six feet wide. There are 80 of such lights full of Epacris, in 60-pots, four in a pot. Heaths are potted in the same way, from the cutting-pots ; and next spring or summer the ball is divided into four parts, a tiny little wort in each part. That is the best way for amateurs, with almost all their spring cuttings ; or, if they are strong sorts, put six, eight, or ten of them, from the cutting-pot, into 48-pots, till they are strong enough to plant out. At all events, potting scores, or thousands, of such little plants into 60, or into thumb-pots, would be enough to drive a man crazy, looking after the little mites, sucking, sulking, or scorching, all day long, and from one day and week to another.

Among Conifers, I saw—Five or six thousand seedlings of the beautiful *Cupressus Lawsoniana*. Three thousand seedlings of *Picea Nordmanniana*, from a hint I gave in THE COTTAGE GARDENER, as to where it could be had in the Crimea, on the authority of a Colonel in the Guards. Fifty thousand seedlings of *Cupressus macrocarpa*, from Mr. Thomas Bridges, and every one of them quite different from *Cupressus Lambertiana*. So Mr. Gordon and Dr. Lindley made a sad blunder about *C. macrocarpa*, in saying, and in still insisting on the error, that it is identical with *Lambertiana*, which, most certainly, it is not, and never was. Seven hundred *Clematis lanuginosa*, all grafted on the roots of *C. caerulea*, which never throws up a sucker, as they are like Dahlia or Asparagus roots,—once you get below the region of the eyes, you are safe from suckers for ever and for aye. The *lanuginosa* is the best of all the hardy Clematises. Some scores of large *Yucca recurva*, in pots, and the best of them also. Forty large specimens of the gold variegated *Yucca*, also in pots,—a scarce thing. The finest in Europe, and, I believe, the original *Araucaria Cookii*, from Mr. Loddiges' sale, and knocked down by Mr. Stevens. It is a splendid plant, upwards of eight feet high. It would be a great

pity that this plant, in commemoration of our earliest and greatest circumnavigator, who lost his life in the good cause, should go to a private collection, and be seen no more, as it were. If I were a rich shareholder, I would buy it, and present it at once, gratis, to the Crystal Palace. Then I should have my name on the label, associated with the name of Captain Cook, and I could die contented. But, hark! fourteen Wardian Cases, from Sydney, two months back, brought 500 Araucarias, and a great many *Dammara Bidwillii*, which comes nearest to *D. Brownii*, and not one single leaf was hurt out of the whole lot. The plants are now as good looking as if they were raised from seeds on the spot, and are from nine to twenty inches in height. The kinds are—*Cunninghamia excelsa*, *Cookii*, and *Bidwillii*. But, with the exception of one more case from Hobart Town, none before ever came to hand at Clapton, from Australia, with all the plants in as good condition as when they were packed, if not in a much better state. So that some kinds of plants, at any rate, will live, and that most comfortably, for four or five months in the year, without much change of air, in these cases,—notwithstanding what Dr. Lindley has said, on “Give me air, or I die.”

But I must name *Dacrydium elatum*, the most elegant plant among Conifers I ever saw in a young state. A wood of it, such as the plants under review, would be in keeping with the fairies’ festival at Windermere, as told by Christopher North. A whole house of Otaeite and other dwarf Oranges, large Camellias, Azaleas, Libocedruses, Wellingtonias, Araucarias; and up on a brick-shelf bed,—the original propagating-bed described by Mr. Low, in “Loudon’s Magazine” for 1826-7,—thousands of *Lilium giganteum*, in all stages of raising, from seeds. Six ranges of cold pits, each six feet wide and 217 feet long, are brimful of the younger members of all the best families of greenhouse plants, hardy Conifers, and hardy Ferns. There seems no end to these Ferns, or to the interest and trade in them, and in variegated and fine-leaved plants. There is a silvery variegated Chinese Azalea, called *Grande Duchesse Hélène*, the best of that race. A tree Lycopod, from Borneo, the only plants of it in Europe, and they are ticklish to strike, and the oddest of all that come near to Ferns. At the end of each shoot springs out a tassel of another aspect, as we see buds next growths sometimes. This will, probably, be a dear plant for a long time.

Scores of *Witsenia corymbosa*, and the largest specimen of the same I ever saw. It is four feet by four feet, and healthier than a young plant. Lots of *Pentstemon Murrayanum*, a difficult subject. Two hundred *Begonia rex*, all together, and in one-sized pot, made as good a bedding show as two hundred *Flowers of the Day*; and lots of Begonias are as handsome and as cheap as *rex*.

The way they propagate these “illustrated Begonias,” as some one called them, is most remarkable. Mr. Low bought three leaves of *Begonia rex*, from the Messrs. Rollinson, for £10, to begin with, and from these three leaves he made 300 plants in three months. The whole secret was shown and explained to me, as practised just now on several other newer kinds, which promise to be as handsome as *rex*. The first thing is to cut according to your cloth, and the cost of the article. Then, if a gardener, with a piece of cloth, and of the shape of a Begonia leaf, had to cut it for shreds, to nail trees with, and wished to make the most of it, he would exercise his geometrical skill in cutting the piece, so as to have no waste; and that is how they do cuttings of these leaves, every cut, or bit, of which will make roots, and form plants. These bits are put in just like cuttings, all over the pot, as thick as they can be placed: they are kept close and moist, in strong heat, but have no bellglasses over them. *Rex* is now seeding there, after being set with the pollen of other kinds, which are as beautiful as itself; and here they are—*Begonia argentea guttata*, *Miranda*, *lazula*, *Madame Wagner*, *ricinifolia*, *maculata*,

and *Prince Troubetskoy*, which is after the looks of *Griffithii*, which was first called *picta*. The true *picta* is here also,—a greenish-brown leaf, spotted with silver.

A large stock of *Gesnera Donckelarii*, showing it to be a great favourite; and of a new kind, named *Madame Auguste Miellez*, with purplish flowers, after the manner of a Gloxinia also, and deservedly a great favourite. The little silver-spotted Caladium, which attracted Her Majesty’s attention so much last spring, in St. James’s Hall, goes to rest for the winter, like a fairy, as it is. A stock of Pitcher Plants from cuttings. *Heterocentrum roseum*, the pretty winter-flowering Melastomad, which Dr. Lindley and myself pronounced new last week, in St. James’s Hall, from the Messrs. Spary and Campbell, of Brighton, is just as old as the hills. Mr. Low had it from an old garden in the North, and recollects my having it in 1830, on rockwork, in the Orchid-house. If that be so, it is far better than we know of now; for give it free soil and space, and it will bloom nine months out of the twelve; and it is as cheap as a good two-year old Fuchsia. This is another example against being too positive in our opinions and estimations of plants, and a peg to hang on the two most positive and opposite opinions of the very same individuals from the same Hall. Dr. Lindley is positive that the cut flowers of the Chrysanthemums at St. James’s Hall were not dressed, and Donald Beaton is just as positive that they were dressed, and that in the first style of fashion. If a lady took in a man about dress or dressing so easily, she might liken him to green Gooseberries, of which they make Gooseberry fools. But here is a case to the point. There is a very pretty, dwarf, old-fashioned plant, which was out of sight and out of mind for years and years, and some of the Continental nurserymen have taken it up, and are passing it off as a new, double, fairy Myrtle, which they name *Myrtus Bletia*. But at Clapton it goes by its proper name of *Serissa fétida flore-pleno*, although it might be called a fairy Gardenia, to which it is closely related; and the fairy Gardenia blooms all the year round, grows ten inches high, and forty or fifty inches through, in about twelve years.

But, to change the subject, let us go among Fuchsias and bedding plants. A fine Continental kind, called *Tricolor*, took my fancy: it has a scarlet tube, white shaded sepals, and a violet-blue corolla, after the fashion of *Venus de Medici*. *Madame Miellez* is much after the same model. *Prince of Prussia* (Smith’s) they told me was the best of all the white corolla kinds. *Queen Victoria* and *Mrs. Story* are the next best of that strain, but both of them too rambling in growth.

The best new double Petunias, from the Continent, are—*Hendersoni*, *Leopold*, *Impératrice*, *Madame Louise Thibaut*, and *Verschaffeltii*. And, best of all, a new dwarf, blue, bedding Lobelia, which is likely to turn *speciosa* out of cultivation. This was discovered out in the far interior of Morton Bay, by the curator of the botanic garden there, who went there from Kew. It has been drawn, to be figured by Sir Wm. Hooker, in the “Botanical Magazine,” and is to be called *Lobelia trigonocaulis*, which, being interpreted, means *treis*, three; *gonu*, an angle or knee, or some swellings like them; and *caulis*, a stem or shoot. The flower I can vouch for, as the original plant was planted out last summer, and was taken up and potted in October, and is still flowering as freely as ever. The flowers in shape, size, and colour are intermediate between those of *speciosa* and *ramosa*, which grows eighteen inches high; not *ramosoides*. The plant will be more compact, but stronger than *speciosa*. Ten thousand of it will be planted out next May, as Mr. Low has begun giving it out to the trade already, and very reasonably indeed.

This Lobelia I consider the best acquisition of the season. But, among a host of new plants from Borneo, at Clapton they think far more of a fine new stove plant, for specimens to the shows,—a noble-looking plant, which

flowers in drooping clusters, like a *Hoya*, with from twelve to fourteen flowers in a cluster. It is *Plocostemma lasianthum* of Blume, which Sir William Hooker adopts in the "Botanical Magazine." Mr. Hugh Low, who discovered this plant, also speaks very highly of another new Bornean plant,—a stove climber, putting one in mind of *Hoya imperialis*, with the leaves, in marking, like some of the new Begonias. Also, a grand new Fern, from the same quarter, called *Lindsaea decomposita*, the first living plant of it in Europe, and its identification clearly made out by Mr. Smith, of Kew. Also, a new Bornean Clerodendron, which is highly spoken of. *Ræmeria argentea*, one of Linden's fine large-leaved plants. The dwarf fairy *Maranta* and *M. crenissima* are both new and beautifully marked. Ferns, Orchids, and Lycopods still in great demand, but mostly in the trade. Thousands upon thousands of seedling Ferns, in all stages, from pots, not yet up, the seeds being only just sown, to the size they are best fit to pack and travel. I never saw the like before. But I only noted a few of the largest and finest looking to my eye, as I am not any authority on Ferns, the worst luck. *Pteris scaberula*, fine, elegant, and rare; *Asplenium formosum*, a rare dwarf kind; *Gleichenia microphylla*, *dichotoma*, and *flabellata*, my own favourites; *Scyathaea medularis*, and *excelsa*, a fine tree Fern, and one of the rarest; *Marattia cicatcfolia*, another fine tree; *Alsophila Guianensis*, *Davallia aculeata*, *Todea pellucida*, and so forth.

Fine plants of the *Artocarpus incisa*. Then on to Orchids—200 *Phalaenopsis grandiflora*. Not quite so many of *Brassavola Dibiana*, *Barkeria spectabilis* and *Skinneri*, *Vanda caerulea*, and all the Eastern Dendrobiums and Vandas; the curious *Platycerium stemmari*, which throws out sucker-like plants from the roots at a distance from the rootstalk; and the last rarity on my list is a new greenhouse plant, from Morton Bay, called *Barklaya syringaeflora*—that is, with flowers in the way of Persian Lilac, but of an orange-yellow colour. This is said to be a very fine thing indeed.

D. BEATON.

ORCHARD-HOUSES.

SEVERAL weeks since, I had a trip for a week in some of our not far distant counties, and, in the course of conversation with some gentlemen,—who have small establishments in the gardening way,—had many inquiries concerning orchard-houses. I must confess at being astonished at the crudeness of the ideas of some of these persons, who were, for the most part, belonging to that class commonly called "amateurs." One thing I at once observed, that those who had not yet erected one were fearfully sanguine as to the results. But I met with one who was as grievously disappointed: he had erected one at considerable expense, about three or four years since, and it was a signal failure. This is rather lamentable on both sides; it is folly to overrate on account of novelty, and equal folly to blame a principle, which, whatever may be its merits or demerits, is ill carried out, and the blame thrown entirely on the original inventor.

I, therefore, intend offering a few remarks on them; and, in so doing, I shall state freely, and devoid of the fear of the hottest advocates of orchard-houses, what I think concerning them. The gentleman who appeared so dissatisfied complained that the trees, &c., soon fall off by pot culture. He said, that the fruit bushes, Peaches, Nectarines, Plums, &c., although most promising when fresh from the hands of the nurseryman, never looked so well after, and were very liable to insects. He wanted to know what he must do with those older pot plants which had become pot-bound and exhausted. He seemed also desirous of having his house heated, complaining that some of his fruits were no earlier than those out-doors, and not so large. Some other little complaints he made, but they were, in the main, such as apply to fruit trees out-doors.

Before remarking on these little details, I may first take a glance at their construction, and the objects sought to be attained:—

First. I suppose we may place a better condition for setting the bloom.

Second. Higher flavour.

Third. An agreeable recreation to those interested in fruit culture.

To which may be added, perhaps, according to some men's estimate, earlier productions occasionally, and a larger succession; the two latter somewhat doubtful, at least I think they should not be allowed very much weight in the question. In order to carry out a kind of half-forcing principle, it has been advised by some, to treat them artificially; but the thing would no longer be an orchard-house, in the original signification, but an ordinary hothouse for fruits in pots. If such be admitted, any house—such as viney, or plant-house—already existing may be converted, in one week, into an orchard-house, and the great cheapness and simplicity of the original hedge-back orchard-house entirely repudiated. No hedge-backs for me. In the hands of such men as Mr. Rivers, knowing the capabilities of fruit trees, having every appliance, and the pick of a thousand or more trees, such wonders may be exhibited, as may, indeed, carry fully out his desires, and astonish those good people, who thenceforth consider the question as fairly settled. But, softly, my good friends; steer cautiously; there are breakers ahead.

With regard to the construction of an orchard-house, it strikes me, that the ridge and furrow running north and south would be a much safer and more eligible form, in the hands of amateurs, than a southern lean-to,—so much mischief has occurred through bad glass and neglected ventilation. Another good form, in my opinion, would be the old-fashioned house, with north lights. Some of these still stand in various parts of the kingdom, and they generally have a south glass-roof of about nine or ten feet, and a north glass-roof of about four feet. But, for the orchard-house, I would almost reverse this, and make the back roof much the largest; but then I would, if possible, place this house facing the south-east, or nearly so. Now, in such a case, there would be much less mid-day heat,—suddenly acquired,—but a greater average of both heat and light, for the sun would be acting on the back roof from about 3 p.m. until 7 p.m. most of the summer, &c.

But, after all, I much fear that—although fruit trees of some kinds may be cultivated well, in pots, for awhile—the thing, as a system, will scarcely prove satisfactory in the long-run, in ordinary hands. Wherever the labour question is pared down as close as may be, it can never prove satisfactory long together. Whatever people may say or think, there will, on the whole, be required a good deal of extra labour in the orchard-house, if success is to be attained; and in many cases it may prevent other business.

But, to pass by the labour part, how long shall we say fruit trees may be made to last profitably, in pots? To be sure, pots might be made as big as a barrel; but this cannot be thought of,—there are too many obstacles in the way. We will take the ease of young trees from the nursery, just screwed up to concert pitch, as the fiddlers say. The first summer they bear half-a-dozen or so, perhaps; the second, if well managed, they may have what is called a nice little crop for a bush; the third, they will be getting pot-bound, if not before, and smaller fruit will be the consequence. After this, unless extra means are taken, it is probable that the fruit will much decline in size and quality. Disroot or not, the roots will one day become inconveniently large.

Now, with very experienced persons, these evils, I admit, may be much mitigated; but my remarks are not intended for them. I would fain teach young amateurs not to be too sanguine, and to be on their guard against contingencies

which must occur. There is one thing to be observed with regard to old stock becoming unmanageable, they will prove excellent subjects to plant out in the garden, for they will have become so dwarfed as to be fit to export to China. Much, very much, will depend on the character of the soil in the pots, and the mode of potting. And here, as to soil, I strongly recommend that which I, for the last twenty years, have used for Camellias with the highest results. I have not had a general potting of Camellias for about seven years : most of them are so pot-bound as to astonish some persons who notice them ; but still they flourish. At the last general potting, or tubbing, I obtained, somehow, a sample of very strong, or adhesive, loam, from a pasture which had not known the plough for some fifty years or more. The turf, consequently, was some three inches thick, and as tough as the best blanket.

This was piled up indoors for many months, to become dry, and when completely so, was chopped by a sharp spade into squares, or irregular lumps, averaging about two inches square. Of course I do not intend, good folks who happen to read these remarks, to think that two is a magical number in this case. I must somehow try to convey a correct impression. After chopping the desired bulk, the whole was well riddled, and that with a strong hand ; and the consequence was, that about one-half of the more clayey, or soily, matter became disengaged ; and the mass left was a body of these cubes of turf, so elastic when heaped, that by a thump they would bound from the potting bench. They were masses of organic matter, interspersed throughout with as much of the clayey principle as needed—that is to say, to carry out a double purpose, the prevention of sudden injury to the roots through drought, and still so porous that they were in a position to let water pass through them with rapidity. At the same time, be it remembered, that the organic texture was of so strong and durable a character as to preserve its texture for years. This it has done, for, in repotting Camellias that had been thus handled half-a-dozen years since, I have found these squares in the old ball nearly as fresh-looking as when put in, and thoroughly invested with a network of fibres. My chief reason for this proceeding, indeed, was to provide a long enduring material, that could bear repeated applications of liquid manure as years rolled on. It has accomplished all this.

Now, since, in my opinion, the use of liquid manure at proper junctures should be part and parcel of the plan from the first in pot culture, it behoves the man who pots these fruit bushes in their earlier years, to well consider this question of texture in the soil. With complete drainage, I am not aware of any of our fruits that will not thrive in this material, from the Vine up to the Pear tree. But root-pruning, and what is vulgarly called disrooting, must, in my opinion, form an important division of this subject.

As to root-pruning, this must have been called into requisition several times previous to their arrival at a full fruiting condition ; for every time a tree is removed, we have a case of root-pruning, or root-breaking, if you will. Whatever the stocks be that are used, although naturally fibrous, a certain amount of root-pruning is of much importance in every dwarfing system, especially as to long-continued pot culture. By disrooting, I do not mean cutting away all the fibres. This term, so inapt, seems to have had its origin in the days of Pine Apple mutilation, when a man was ordered outside the camp, if he did not disroot annually.

But this I do mean, with regard to pot-bushes in the orchard-house, that when they become too stunted, through bearing, age, &c, they should be suffered to become very dry in their pots previous to the operation, and in that condition turned out, and all possible old and worn soil dislodged. At the same time trim the roots, remove those partly in root and somewhat naked, and encourage by all possible means fresh young

fibres. But, with my advice, the parties will let them rest from fruiting for one summer after such operation, and suffer them to pass their time out-doors, plunged from June to the end of August, using the finger and thumb occasionally over rapid growths.

I spoke, I believe, of ventilation, in the earlier portion of these remarks : I beg again to refer to it. I advise all about to build orchard-houses, to provide the most ample ventilation possible, of a specific character,—not by a hedge ; at the same time, to possess the power of enclosing any amount of solar heat deemed necessary in the afternoon,—what is called “putting them to bed warm.”

Where any amount of acceleration is needed, this is the very best plan by which to carry it out ; and feeling assured of it, and the awkward tendency of plants indoors, in a southern lean-to, of drawing or growing towards the light, was one chief reason for recommending the house with a north light, and facing the south-east. In such a house, any necessary degree of solar heat might be shut in (after the most free ventilation for hours) from 3 p.m., through the evening. But scorching the foliage must not be thought of ; and, indeed, there is no reason why such should occur, unless the glass be bad, or the house ill-constructed, as to ventilation. As the object is rather to obtain a sure crop, in a small compass of ground, of superior fruit, than any particular amount of acceleration, the ventilating openings should be thrown wider by 7 a.m., all the summer. Let them, indeed, have a hearty puff of wind occasionally, if not too keen. This will keep the bushes sturdy, allow the fruit due time and chances for swelling, and give them a hearty relish for the solar heat shut up in the afternoon. It will thus be readily seen, by those free from bias or undue interest in the case, that this—in a house of substantial character, with a solid back—may be made to amount to a degree of forcing,—only let us call it natural forcing. In the midst of such practice the syringe must be plied manfully, and copious ablutions frequently used about the floors, &c.

Whilst discussing the potting of fruit bushes, I forgot to state one thing connected with the fibrous, dry loam I recommended. It is well known that soils in a dry state may be rammed tighter in the pot than when moist,—in other words, a pot of a given size may be made to contain about one-third more soil.

Now, in Camellia potting, the way in which we ram this open, dry, turf-like material, would astonish some folks. It is packed, or crammed, as tight as a blunt-ended stick can effect it, round the sides of the ball ; and if the turf lumps be prepared as I have described, I defy any man to ram it so tight but that water will run through with the utmost facility. Let this turf plan be well understood, as I consider it the most important feature in most potting operations. Let us, then, ask what this turf thus prepared can effect, that common, mixed, or riddled compost cannot. In order to show forth its character and mode of operation, I must claim as follows in its behalf :—

First. It is best adapted to the frequent use of liquid manure. The latter is one of the best things in modern practice, when rightly understood.

Second. It will maintain its texture for years longer than ordinary compost.

Third. It will receive and part with water for years with facility,—the water filtering, as if it were riddled through every part.

Fourth. It is particularly adapted to the potting, or tubbing, of plants which have to remain years without repotting.

Fifth. It is much less liable to worms than mixed composts.

These, then, are—as I know by long experience—the effects of the use of this prepared turf,—merits which cannot possibly be claimed on behalf of mixed and comminuted composts.

I have deemed it necessary thus to offer my opinions about orchard-houses, and the collaterals connected there-

with, and I hope it may assist the ideas of some of those gentlemen who expressed their difficulties to me, and not only them, but many others.

I am aware that the idea of their immense utility has gained such ground, as almost to attain the consequence of a fashion, and, as such, dangerous to meddle with; but as long as I am left with whole bones, I do not care. However right or wrong any opinion may be I have expressed, no man, if right intentioned, will blame me for thus trying to "ventilate" the question.

There is one class of writers from whom genuine writers may be said to recoil instinctively, it is those anonymous gentlemen, who, when they are requested manfully to affix their real name, modestly answer, that "circumstances over which they have no control" preclude the possibility.

R. ERRINGTON.

SEASONABLE NOTES.

CHRYSANTHEMUMS.—"I took up some Chrysanthemums three weeks ago, but the earth fell almost all away from the roots, and the flowers look miserable, as I cannot keep them from flagging." There must have been a fault somewhere. Nothing lifts better than the Chrysanthemum, with ordinary prudence in its management. Some of the most extensive growers, even in pots, plant out, and lift as the buds are swelling. I presume you lifted rather late. I lifted a good many after the flowers were opening, and there was no flagging. That, however, was rather late. These when planted out had each a shovelful of rough nodules of fresh loam and half decomposed leaf mould put round them, and the roots hung in them nicely. Before lifting, however, they were twice well watered, and even then it was found the water had not gone far enough. They were watered well after potting, and placed in a rather shady place for a fortnight,—the heads, in drying weather, being syringed at midday, or oftener, if necessary. By that time the roots were working freely, and, when the plants were exposed, they stood the sun as well as could be expected. In such a dry autumn, if you did not water well some time before lifting, we can only excuse you, if, as one of our correspondents says—"Letting alone the impossibility of getting the October brewed, the old women were at their wits end to get water for their tea-kettles." How is it that so many of our young men are so ready to throw a sneer at the teacup? Are they quite sure that in this they are showing themselves to be the disciples of true social progress? Laugh, if you will, at crinoline, but, if you are wise, give homage to the tea-table, with woman at its head, as one of the greatest civilisers and elevators of these times.

CINERARIAS FROSTED.—"I had these in a small frame, and got the edges of all the best leaves blackened one of these nights. Will they recover?" Yes and no. Yes, so far as blooming is concerned, because we have heard of no frost before the 15th of November that would thoroughly injure them in such circumstances. The beauty of a Cineraria, however, in our opinion, consists in having fine healthy leaves close to the surface of the pot; and this beauty you will not obtain, if your plants bloom at all early; and hardly will they be equally fine, if you wait ever so long for that blooming. If the plants were worth all the attention you say you have given them, they were worth the trouble of taking all the air from them on the night you specify, and even placing a mat over the glass until eight or nine the next morning. It is true, these plants can hardly be kept too hardy at this season, more especially if you do not wish early bloom; but the damp condition—both at the roots and in the atmosphere—in which they delight to thrive, renders them more liable to frost than other plants harder in their stems and less succulent in their foliage. This will account for the fact, that pot Pelargoniums, in similar

circumstances, did not seem to suffer at all. The stems were hard, the leaves were small, and were less cooled, comparatively, by evaporation and radiation. Cinerarias growing freely will endure any cold short of actual frost; but very little of that injures them. You might have saved your plants, if, instead of exposing them to the sun, you had syringed with the coldest water, and shaded them closely for a couple of days. This would be of no avail, however, if the plants were much frosted.

HEATHS.—"I have taken in and housed some Heaths white with mildew. What shall I do with them?" Perhaps the best thing would be to pitch them on the rubbish-heap, as after such a fine, airy, dry autumn, if the mildew has made such progress, it would be difficult to eradicate it in winter. If you wish to try, however, take the plants to a back shed, tie a piece of cloth over the surface of the pot, lay the plant down on its broad-side and cloth, and daub it thoroughly all over with flowers of sulphur from a dredge or pepper-box. Let the plant remain thus covered for a couple of days; then shake the sulphur off, and syringe the plant well, preventing the sulphur, and also the syringings, from going into the soil. Then take the plant to a shady part of the greenhouse, and in a week or ten days repeat the process. A state of moisture at the roots, neither dry nor soaked with wet, and plenty of sweet air, are the great preventives of this pest.

SPOT ON GERANIUMS.—In answer to several inquiries, I would say, that when this shows itself so early as this, it is difficult to effect a cure. The spotted leaves will never recover, and, therefore, they should be all removed at once, if it would not check the growth of the plant too much; by degrees, if the plant would not stand their removal at once. The young leaves may, with great care, be induced to come healthy, by attending to thorough drainage, using light, sandy, fresh soil, and rather rough,—unless the mere surface covering, which should be finer,—to prevent the air entering too freely; giving an average temperature of not often below 45°, and frequently a few degrees above it; and presenting them with no more chilled water at the roots than will prevent flagging, and keeping the foliage as dry as possible, with abundance of pure air on all suitable occasions.

SALVIAS.—"I grow several of these for house decoration, and also for flower garden purposes. I was recommended to keep the old roots of *fulgens*, &c., over the winter, but I find plants struck in autumn, or even spring, bloom better and more regularly." Follow the plan that answers best. Salviyas left in the ground often grow irregularly, and bloom late. If the roots are packed under cover, what is sound of them when planted will bloom earlier than those not transplanted; but not earlier nor better than the young plants to which you allude. The value of the two modes depends mostly on the means at your disposal. All these young plants will require light and attention to air-giving in winter. But, supposing you could not find such a place for them, you might cover the old roots with moss, litter, or ashes, on the ground; might lift them and plant them in sheds, where little frost would get at them; might place them with their roots imbedded in earth, and the tops out, as if you were forming a Potato-cone, and then thatch all, to keep out frost and extra wet; and you might be sure, by any of these modes, to have plants in April or May. But if there is house room, the raising young plants every year will, I believe, answer best.

OLD PLANTS OF SCARLET GERANIUMS.—"I raised these, took off all the soft parts, and packed the roots as thickly as faggots, under a cold glass frame; watered the roots, and threw dry soil over the top, but not covering the stems much; kept the glass close for a fortnight; and now I see the old stems are breaking freely. Did I do right?" Yes and no. Yes, so far as treatment in planting, &c., are concerned. Yes, if you wished your plants to be early, and did not grudge extra care in

winter. No, if you wished merely to preserve your plants in winter, at the least trouble, and just to be fit for use in May, and breaking but little until the days lengthened in April and March. To secure these objects, we should not care about getting fresh shoots protruded from the bare leafless stems now, but would rather give plenty of air—instead of shutting close—to prevent it; as the more growth that takes place before the dark days, the greater will be the trouble to keep that growth healthy, and going on through the winter. A frost that would easily injure these young growths—and through them the whole system of the plant—will have no effect on the dry stems of the plants deprived of all their leaves. Of course, a severe frost, not kept out, would destroy these stems, and their roots too; but a few degrees would not hurt them, like succulent young shoots. Hence, the great secret of preserving old Scarlet Geraniums easily, in cellars, or haylofts, is, to remove the whole of the foliage, and the softest points of the plants, as those parts which perspire most freely; and then, if the roots are moderately moist, the stems will absorb about as much as they perspire; and, if the place is cool enough, and dry enough, fresh growth will not be induced until the sun heats all our places in spring. Before that, light is no object of great importance. Whenever the young shoots begin to break, light must be given, or we obtain diseased and spindling growth. When, as in this case, a glass covering is provided, and a little extra care is not thought of much consequence,—provided nearly all the leaves are removed, the points of the smaller plants might be left, as that would carry on the growing process, and there would be less danger of damping at the cut parts. When such soft point parts are left, the frost must be more rigidly excluded. When these plants are to be kept by any of these methods, it is desirable to take them up before the frost injures them; for when the stems are much affected at the points, the harder part always keeps the worse for it.

WINDOW GARDENING.—The windows should now be well cleaned. Pots of Geraniums, Primulas, Chrysanthemums, Cyclamens, Roses, Bulbs, &c., scrupulously scrubbed, and fresh surfaced with new soil. Water given according to the requirements of the plant, with little or none left remaining in the pans. Air given at all favourable opportunities. In close, cold weather, neutralise the dry air from the fire in the room, by frequent sprinklings over the foliage. To give room, remove Myrtles to any place, where the frost will not be severe, and where there will still be a fair portion of light. Salvias, Fuchsias, &c., may be placed anywhere, free from frost and much moisture, and will need no light until fresh budding in spring. Aptness and contrivance will here do wonders. Without them all instructions will be unavailing. Pot gardening has conferred much happiness, but much more would be realised by our window and small gardeners—aye, and by all of us, could we be more apt, and banish the word *cannot* altogether from our vocabulary. I cannot do this, and I cannot find time for that, meet the men of progress at every turn. But—

“He can who thinks he can,”—self-confidence
And self-reliance are twin and kin.
Possessed of these,
All things are possible; few difficult.
Leave “can’t” for children, “try”’s the word for men.

R. FISH.

FORCING POTATOES FOR EARLY USE.

LAST week I described the mode whereby Potatoes, having some of the properties of young ones, might be had in the open ground during the winter, and, in fact, during a great part of the year, if thought well to try it so. I now endeavour to point out how young ones have all the characteristics of ordinary out-door grown ones of early summer, but at a period when many things more hardy than the Potatoe are unable to bear the cold;

and as the article thus produced has more claim to the title of young Potatoes, both in the matter of growth and taste and appearance at table, it is accordingly awarded a higher place there. In fact, young Potatoes, like the first lamb of the season, or any other early and unaccustomed article, are generally welcomed by all, as the fore-runners of greater plenty in that way, and, it may be, the harbingers of finer weather, and other interesting things. As the means necessary to obtain this general favourite are far from costly, it is not necessary to preface the mode in which it is done, any further than by saying, the means are generally in most people's hands, who have a spare frame and a heap of leaves.

Let us suppose a heap of tree leaves, collected together in the autumn to some well sheltered place, where the sun has free access in the whole of his range during winter. This heap, being composed of leaves of various kinds, generally yields a little mild heat, of an uniform and lasting kind. Let a box-frame, of the size required, be placed on the top of such leaves, its face sloping to the south; inside of the frame put some fine mould, if fresh and moderately dry so much the better; and in this plant the earliest and most useful short-topped kind of Potatoe that does well in that neighbourhood. Generally speaking, they are planted much closer in such places than in the open ground: rows eighteen inches apart, and the sets about eight inches from each other, is, however, quite close enough for all useful purposes. *Kidneys* of the *Ash-leaved* variety are often planted; but sometimes round ones do pretty well. The great thing is, to have a kind not addicted to run too much to useless top, and one that is esteemed by the family requiring it. About the ordinary amount of covering will do,—say, six inches of soil underneath the set, and somewhat less than that depth above it: of course, the lights must be at once put on, and every precaution taken to keep out frost at all times.

The time most proper to put in such a crop depends on the means at hand. Generally, leaves are collected at the end of November: they heat very quickly, and may be planted on at once. As the Potatoes intended to plant are supposed to have been growing on some favoured early spot the past summer, and to have ripened and matured early in the season, by the end of October many such Potatoes will begin to shoot and show strong signs of a wish to be planted. Being planted, then, a few days after the earth has been put in the frame, and got a little warm, they will require but little care for some time, except to keep the frost away from them. For this purpose, covering up thickly with straw, or some other covering, will be necessary in very frosty weather, in the daytime as well as at night. But let them have all the light they can at other times; only, after the confinement of a week or more, admit the light sparingly at first; and by degrees admit the air also, as the blanched and delicate character of the top prevents its enduring any chilly blasts at this time.

Where leaves are not to be had, tan may sometimes be used with advantage; but the uncertainty of this article heating has of late years driven it much out of the fore-going department. It is, however, a more compact article; and, being more in the manufacturing way, it is generally more easily obtained near a town than leaves; and, if it heats gently, it will do very well. The remarks made in the former case, relative to planting, covering up, &c., are also applicable to this. One thing, however, it is proper to observe, that, although the best material generally produces the best result, in this case the best frames need not be planted with Potatoes, if other things be also wanted; as old or defective ones, with any hole or imperfection, stopped up in some homely way, are good enough for Potatoes. But there ought to be a fair proportion of glass surface, for light; and cold rain and melted snow ought never to find their way inside.

Although the progress of the Potatoe during the dull, cold days of winter is very slow, it is, nevertheless, in a

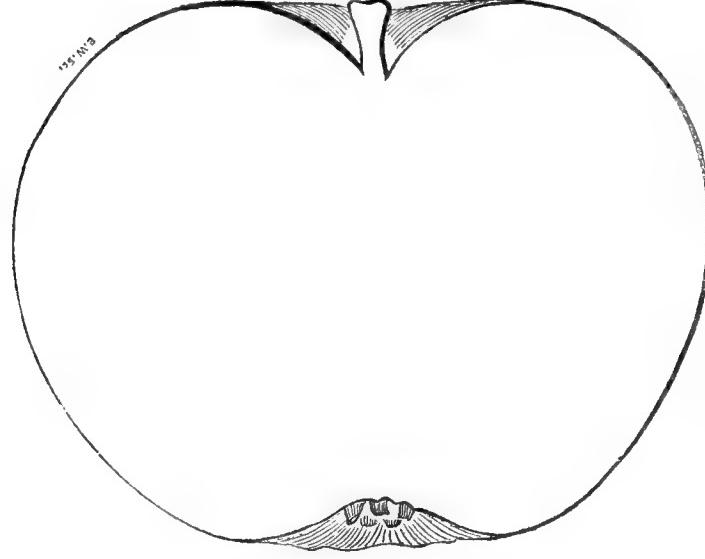
position to start off when a more sunny period arrives. Still, it must on no account be allowed to become too much chilled, otherwise the crop will be absolutely later than some planted several weeks after they are put in. A lining of warm dung will do much to restore heat in the waning bed, and prevent that check which is so difficult to make good again.

A more homely way has been described in these pages, of obtaining Potatoes much earlier than they usually come in the open ground, by planting them on rough hot-beds in January, and covering them up in a homely way with anything at command. But, when they are wanted in March, there is no other way than allowing them a glass covering up to the time of taking them up. After crops; however, may have less indulgence, and perhaps turn out quite as well, but, as I have before said, cannot be depended on as coming so early.

J. ROBSON.

FRUIT AND FRUIT TREES OF GREAT BRITAIN.

(Continued from page 86.)



No. XIII.—COX'S ORANGE PIPPIN.

LAST season, at the first annual fruit show of the Horticultural Society, held in Willis's Rooms, the Judges astonished the gardening world when they reported, that they had met with a better apple than the *Ribston Pippin*, and that, by their award, that prince of apples must henceforth take rank with his commoner brethren. I had no opportunity of forming an opinion on the comparative merits of these two fruits, and was therefore content to abide by the decision come to on that occasion; at the same time, reserving a certain amount of doubt as to the permanent correctness of the opinion given. I have this season had several opportunities of ascertaining the merits of this fruit, grown in various localities; and, from what I have seen, I have come to the conclusion, that this variety is as subject to variation in its properties as any other variety of apple, according to soil and situation; that in its best state it is neither superior nor equal to the *Ribston Pippin*; and that its proper place in the scale of comparison is along with the *Golden Reinette*, which I have often met with as highly flavoured and as tender fleshed as Cox's *Orange Pippin*. There is no doubt that it is more tender in the flesh than the *Ribston Pippin* generally is, but not more so than the *Golden Reinette* always is. Its flavour is decidedly inferior to *Ribston Pippin*, *Golden Harvey*, and many other varieties I could name, and not superior to *Golden Reinette* when well ripened. At the same time, it is one of the very best of dessert apples, and one that ought to find a place in every garden.

Fruit slightly fragrant, round, even in its outline, and handsomely shaped.

Skin smooth; on the shaded side deep golden yellow, with a few faint, broken streaks of pale crimson; on the side exposed to

the sun it is entirely covered with crimson with broken streaks of darker colour; and over the surface, and particularly about the eye, are a few tracings of thin ash-grey russet.

Eye small and open, with erect segments, which are reflexed at the tips; set in a rather narrow, round, shallow, and plaited basin.

Stalk short, about half an inch long, and not extending beyond the base; inserted in a round, wide, even cavity, which is tinged with green, and lined with delicate russet.

Flesh yellow, very tender, but firm and crisp, and very juicy. Juice rich, brisk, and sugary, with a fine aroma.

A first-rate dessert apple, in use from the beginning of November till January.

This variety was raised by a Mr. Cox, who resided at Colnbrook Lawn, about seventeen miles from London, on the road to Maidenhead. It originated in 1830, and is said to have been from a pip of the *Ribston Pippin*. If such is the case, I strongly suspect the *Golden Reinette* was the male parent; for it is so closely allied to that variety, both in appearance and flavour, as to leave very little doubt on the subject.

Our illustration is taken from fruit grown by Mr. Groom, gardener to Colonel Vyse, of Stoke Place, near Slough.—H.

AUTUMN-BLOOMING ROSES.

IN answer to your request in THE COTTAGE GARDENER of the 9th inst., I may suggest a few autumn-blooming Roses along with your list, which was as follows:—*Madame Laffay*, *Baron Prevost*, *Géant des Batailles*, *Souvenir de la Malmaison*, and the *Duchess of Sutherland*. The above are all good autumnal Roses, if properly grown; and to them I would add, *La Reine*, and that beautiful old *Noisette* Rose, *Aimée Vibert*, with a nice selection of *China* Roses.

I have had the above Roses in good bloom from their first blooming in summer to the present time. The blooms have not been indifferent objects, as complained of by "A SUBSCRIBER," but in all respects equal to the blooms in the early months of summer, and on the *Géant des Batailles* much finer. This is truly a charming Rose, either for group, pot, or border. I have cut this day (November 16th), a good handful of fine buds, just ready for expanding. I put them into a large seed-pan, filled with fine soil and sand, damp of course, and placed them in a warm corner in the greenhouse, there to expand. These, by the bye, will be very nice to mix along with Chrysanthemums and other flowers, to place in the hall of my worthy employer.

It may be of service to some of your numerous readers to know the situation, soil, and whereabouts these Roses are grown. The situation is upwards of 300 feet above the level of the sea, and about fourteen miles from the town of Leeds, close on the edge of the large moor that separates the two lovely valleys in the West Riding of Yorkshire,—one called Air Dale, the other Wharf Dale. In the latter, stands the romantic village of Ilkley, so much esteemed for the purity of its air and water.

The soil is light and thin, and the subsoil of a coarse, sandy nature. This soil is always ready for good dressings of manure, decayed turf, or anything decomposable that comes in the way to improve it. These the soil receives with a liberal hand, and I maintain, that good dressings of manure, well decomposed, along with good soakings of liquid, are absolutely necessary. If you wish to bloom Roses well in summer and autumn, they must have something to keep up their strength.—A GARDENER.

DRESSING CHRYSANTHEMUMS.

SOME time since you did me the favour of inserting a letter respecting the "dressing" of Chrysanthemums. May I request a similar favour for this, upon the same subject?

Having expressed my objection to the practice of "dressing," it is not necessary to repeat my sentiments; all that I want to do now, is to call attention to the "Crystal Palace Show" (a poor affair, merely a *réchauffé* of the Stoke Newington,—fancy, 5s. for a fourth prize), where, of course, all the cut flowers were trimmed and dressed, with one exception, however—viz., Mr. Salter, of Hammersmith, who exhibited two new varieties—*Golden Queen* and *Prince Albert*—precisely as grown on the plants, the flowers surrounded by a circlet of beautiful foliage, like birds reposing in their nests. To compare the dressed ones with these would be absurd—at least, so I think. The following simile suggested itself:—The dressed flowers reminding me of Queen Elizabeth,—stiff, starched, formal; whilst Mr. Salter's flowers put me in

mind of the simple, but elegant and graceful, Mary Queen of Scots.

I do not write invidiously, because, at the Palace, I did not get a prize. The twelve flowers I showed were the very same for which, at Stoke Newington, I was awarded a fourth-class prize; but not being touched up again,—replugged and retubed,—of course, amongst their newly-dressed neighbours, they cut but a so-soish figure.

At the South London (Camberwell) Society I obtained two first-class prizes for twelve large and six Anemone flowers, *all* not dressed, but just as cut from the plants.

I am told that, try as I may, I shall never write down the "dressing" practice. *Nous verrons*. The system is *dishonest*, excepting amongst exhibitors themselves. The dressed flowers are not nearly so elegant as undressed ones. And I tell the public that, in purchasing Chrysanthemums, if they expect to produce flowers equal to those they see at shows,—excepting by tedious artificial means, they will be disappointed; and whoever sells plants with such a guarantee imposes upon the purchaser.

Do away with the wooden tubing and plugging; throw away the steel and ivory tweezers; show flowers with a collar of fine foliage, placed merely in tin tubes of water; exhibitions will then be more pleasing, and certainly much more reputable. It is said that the public would not come and look at undressed flowers: it is all fudge, and only asserted by those who know that their prizes depend upon their skilful manipulation.

At an exhibition next year,—say, a public place like St. James's Hall,—let me suggest the following:—That there be a stage for "dressed," and another for "undressed" flowers; the former subject to the process of petal-removing, eye extracting (or, more politely, *eye-easing*), tweezer petal-adjusting and curling, wooden tubing, tightening, fixing, &c.; the latter simply cut from the plants with the foliage attached, and placed only in tin vessels of water, for keeping them fresh. I would wager that the undressed flowers would proudly and justly adopt the motto, *veni, vidi, vici!* and that the public would certainly approve it.—WILL WORTH, *Amateur Florist*.

N.B.—In praising Mr. Salter's flowers, you will understand, that I am perfectly unknown to him. I merely write for *honest* flower shows.

BEE'S SECRETING WAX—ARTIFICIAL COMBS.

WILL MR. WIGHTON excuse my asking him if he is acquainted with HUBER's experiments, which appear to me perfectly demonstrative of the fact, that wax is secreted from the saccharine part of honey? Not having the work at hand, I am compelled to quote from memory; but, if I mistake not, they were to the following effect:—

1st. He confined a swarm for twenty-four hours immediately after it had issued, and found at the end of that time six combs already begun, without the bees having had the opportunity of adding anything to the supply of honey brought by them from the parent hive,—thereby proving that supply to have been considerable.

2nd. Having removed these combs, and keeping the bees still confined, he supplied them with honey, and found the combs reproduced.

3rd. The same experiment being repeated more than once—with the substitution of syrup of different kinds of sugar—a similar result followed in each case, with this difference, that bees fed on sugar produced wax sooner, and in greater quantity, than those fed on honey.

If the results of these experiments be correctly stated—and I have never seen them controverted—I cannot conceive it at all probable that bees collect wax from plants in any other shape than that of honey.

My own misfortune, detailed in "BEE-KEEPING IN DEVON.—No. IV.", as well as the instance related in No. V. of the same series, in which a swarm was drowned in its own sweets in the evening of the day on which it issued, are, to my mind, sufficiently conclusive as to the quantity of honey carried off by bees when they abandon their hives, either by swarming, or under other circumstances.

I would also submit to Mr. Wighton, that Hunter does not stand alone in not being aware that bees eject wax from their mouths; his ignorance, in this respect, being participated in, as far as I can ascertain, by Huber, and every other apriarian observer. I may, therefore, be excused for doubting a fact which

has been so long overlooked, and is so opposed to all received ideas upon the subject. Huber states, that each little lamina, or plate, of wax is carried by one of the hind feet of the bee from its abdomen to its mouth, where it is ground into pieces by the mandibles, and, being pressed together into a compact mass, issues from the mouth in the form of a very narrow ribbon. May not this explain what I cannot but fancy must be Mr. Wighton's error, in imagining that bees eject wax from their mouths?

The proposition for trying waxen plates as a substitute for artificial comb is one upon which volumes might be written on both sides, but, as it is also one in which a grain of experiment will outweigh a pound of theory, I shall content myself with repeating, that "it appears to me there is sufficient probability of success to make it worth trying." To which I may add, that, although I shall by no means be surprised by its turning out a perfect failure, it is still my intention to try the experiment next spring, when the result will at once be communicated to the readers of THE COTTAGE GARDENER, by—A DEVONSHIRE BEE-KEEPER.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 120.)

LISTS OF SELECT APPLES,

ADAPTED TO VARIOUS LATITUDES OF GREAT BRITAIN.

I. SOUTHERN DISTRICTS OF ENGLAND, AND NOT EXTENDING FURTHER NORTH THAN THE RIVER TRENT.

1. SUMMER APPLES.

DESSERT.	KITCHEN.
Borovitsky	Sack and Sugar
Devonshire Quarrenden	Summer Golden Pippin
Early Harvest	
Early Julien	Carlisle Codlin
Irish Peach	Duchess of Oldenburgh
Joanneting	Keswick Codlin
Kerry Pippin	Manks Codlin
Margaret	Springrove Codlin

2. AUTUMN APPLES.

DESSERT.	KITCHEN.
Adams' Pearmain	White Ingastrie
American Mother Apple	
Borsdörffer	Bedfordshire Foundling
Blenheim Pippin	Cellini
Claygate Pearmain	Cox's Pomona
Coe's Golden Drop	Emperor Alexander
Cornish Aromatic	Flower of Kent
Court of Wick	Forge
Cox's Orange Pippin	Gloria Mundi
Downton Pippin	Golden Noble
Early Nonpareil	Greenup's Pippin
Fearn's Pippin	Harvey Apple
Franklin's Golden Pippin	Hawthornden
Golden Pippin	Hoary Morning
Golden Reinette	Kentish Fill Basket
Golden Winter Pearmain	Lemon Pippin
Lucombe's Pine	Mère de Ménage
Margil	Nelson Codlin
Melon Apple	Nonesuch
Nanny	Tower of Glammis
Pine Apple Russet	Wadhurst Pippin
Ribston Pippin	Winter Quoining
Sykehouse Russet	Wormsley Pippin
Red Ingastrie	Yorkshire Greening
Reinette Van Mons	

3. WINTER APPLES.

DESSERT.	
Ashmead's Kernel	Court-pendu Plat
Barcelona Pearmain	Downton Nonpareil
Boston Russet	Dredge's Fame
Braddick's Nonpareil	Dutch Mignonne
Claygate Pearmain	Golden Harvey
Cockle Pippin	Golden Russet
Cornish Gilliflower	Hughes' Golden Pippin
	Hubbard's Pearmain

Keddleston Pippin
Lamb Abbey Pearmain
Maclean's Favourite
Mannington's Pearmain
Nonpareil
Ord's Apple
Pearson's Plate
Pinner Seedling
Pitmaston Nonpareil
Ross Nonpareil
Russet Table Pearmain
Sam Young
Spring Ribston
Sturmer Pippin
Wyken Pippin

KITCHEN.

Alfriston
Beauty of Kent
Bess Pool

**II. NORTHERN DISTRICTS OF ENGLAND,
EXTENDING FROM THE RIVER TRENT TO THE RIVER TYNE.**

1. SUMMER APPLES.

DESSERT.
Devonshire Quarrenden
Early Harvest
Irish Peach
Joanneting
Kerry Pippin
Margaret
Oslin

Whorle

KITCHEN.
Carlisle Codlin
Keswick Codlin
Manks Codlin
Nonesuch
Springrove Codlin

2. AUTUMN APPLES.

DESSERT.
Borsdörffer
Downton Pippin
Early Nonpareil
Franklin's Golden Pippin
Golden Monday
Golden Winter Pearmain
Red Ingrestrie
Ribston Pippin
Stamford Pippin
Summer Pearmain
Wormsley Pippin

KITCHEN.
Yellow Ingrestrie
Cellini
Emperor Alexander
Gloria Mundi
Greenup's Pippin
Hawthornden
Lemon Pippin
Mère de Ménage
Nelson Codlin
Nonesuch
Tower of Glammis

3. WINTER APPLES.

DESSERT.
Adams' Pearmain
Barcelona Pearmain
Bess Pool
Braddick's Nonpareil
Claygate Pearmain
Cockle Pippin
Court of Wick
Court-pendu Plat
Golden Pippin
Golden Reinette
Kedleston Pippin
Margil
Nonpareil
Pitmaston Nonpareil
Royal Pearmain

KITCHEN.
Scarlet Nonpareil
Sturmer Pippin
Sykehouse Russet

Alfriston
Bedfordshire Foundling
Blenheim Pippin
Dumelow's Seedling
French Crab
Mère de Ménage
Nelson Codlin
Northern Greening
Round Winter Nonesuch
Yorkshire Greening

**III. BORDER COUNTIES OF ENGLAND AND SCOTLAND,
AND THE WARM AND SHELTERED SITUATIONS IN OTHER
PARTS OF SCOTLAND.**

1. SUMMER AND AUTUMN APPLES.

DESSERT.
Bess Pool
Cellini
Devonshire Quarrenden
Early Julien
Federal Pearmain
Golden Monday
Greenup's Pippin

Grey Leaddington
Irish Peach
Kerry Pippin
Margaret
Nonesuch
Oslin
Ravelston Pippin
Red Astrachan

Red Ingrestrie
Sir Walter Blackett's
Summer Pearmain
Summer Strawberry
White Paradise
Whorle
Wormsley Pippin
Yellow Ingrestrie

KITCHEN.
Carlisle Codlin
Dutch Codlin
Hawthornden
Keswick Codlin
Manks Codlin
Nelson Codlin
Springrove Codlin

2. WINTER APPLES.

Those marked * require a wall.

DESSERT.
*Adams' Pearmain
*Barcelona Pearmain
Bess Pool
*Braddick's Nonpareil
Court of Wick
*Downton Pippin
*Golden Pippin
*Golden Russet
*Margil
*Nonpareil
*Pearson's Plate
*Pennington's Seedling
*Ribston Pippin
*Scarlet Nonpareil

KITCHEN.
Bedfordshire Foundling
Brabant Bellefleur
Dumelow's Seedling
French Crab
Royal Russet
Rymer
Tower of Glammis
Winter Pearmain
Winter Strawberry
Yorkshire Greening

**IV. NORTHERN PARTS OF SCOTLAND,
AND OTHER EXPOSED SITUATIONS IN ENGLAND AND SCOTLAND.**

1. SUMMER AND AUTUMN APPLES.

Those marked * require a wall.

DESSERT.
Devonshire Quarrenden
Early Julien
Kerry Pippin
Nonesuch
*Ravelston Pippin

KITCHEN.
Summer Strawberry
Carlisle Codlin
Hawthornden
Keswick Codlin
Manks Codlin

2. WINTER APPLES.

DESSERT.
*Golden Russet
Grey Leaddington
*Margil
Winter Strawberry

KITCHEN.
French Crab
Tower of Glammis
Yorkshire Greening

V. FOR ESPALIERS, OR DWARFS.

These succeed well when grafted on the Paradise or Doucin stock ; and, from their small habit of growth, are well adapted for that mode of culture.

Adams' Pearmain
American Mother Apple
Ashmead's Kernel
Borovitski
Boston Russet
Braddick's Nonpareil
Cellini
Christie's Pippin
Claygate Pearmain
Cockle Pippin
Coe's Golden Drop
Cornish Gilliflower
Court of Wick
Court-pendu Plat
Cox's Orange Pippin
Downton Pippin
Dutch Mignonette
Early Harvest
Early Julien
Early Nonpareil
Franklin's Golden Pippin
Golden Harvey
Golden Pippin
Golden Reinette
Golden Russet
Hawthornden
Holbert's Victoria
Hubbard's Pearmain

Hughes' Golden Pippin
Irish Peach
Isle of Wight Pippin
Joanneting
Kedleston Pippin
Kerry Pippin
Keswick Codlin
Lamb Abbey Pearmain
Lucombe's Pine
Maclean's Favourite
Manks Codlin
Mannington's Pearmain
Margaret
Margil
Melon Apple
Nanny
Nonesuch
Nonpareil
Oslin
Pearson's Plate
Pennington's Seedling
Pine Apple Russet
Pinner Seedling
Pitmaston Nonpareil
Red Ingrestrie
Reinette Van Mons
Ross Nonpareil
Russet Table Pearmain

Sam Young
Scarlet Nonpareil
Scarlet Pearmain
Sturmer Pippin

Summer Golden Pippin
Summer Pearmain
Sykehouse Russet
Yellow Ingeshire

VI. FOR ORCHARD PLANTING AS STANDARDS.

These are generally strong-growing or productive varieties, the fruit of which being mostly of a large size, or showy appearance, they are, on that account, well adapted for orchard planting, to supply the markets.

Alfriston
Barcelona Pearmain
Beauty of Kent
Bedfordshire Foundling
Bess Pool
Blenheim Pippin
Brabant Beliefeur
Brownlees' Russet
Cellini
Cox's Pomona
Devonshire Quarrenden
Duchess of Oldenburgh
Dumelow's Seedling
Dutch Codlin
Emperor Alexander
English Codlin
Fearn's Pippin
Flower of Kent
Forge
French Crab
Gloria Mundi
Golden Noble
Golden Winter Pearmain
Gooseberry Apple
Hambledon Deux Ans
Hanwell Souring
Harvey Apple
Hoary Morning
Hollandbury
Kentish Fill Basket
Kerry Pippin
Keswick Codlin

Lemon Pippin
Lewis' Incomparable
London Pippin
Longvilles' Kernel
Manks Codlin
Margaret
Mère de Ménage
Minchall Crab
Minier's Dumpling
Nelson Codlin
Norfolk Bearer
Norfolk Beefing
Northern Greening
Reinette Blanche d'Espagne
Reinette du Canada
Rhode Island Greening
Round Winter Nonesuch
Royal Pearmain
Royal Russet
Rymer
Small's Admirable
Striped Beefing
Toker's Incomparable
Tower of Glammis
Winter Codlin
Winter Colman
Winter Majetin
Winter Pearmain
Winter Quoining
Wormsley Pippin
Wyken Pippin
Yorkshire Greening

QUERIES AND ANSWERS.

OFFSETS ON HYACINTH BULBS.

"Will you be kind enough to tell us, before the Hyacinths emerge from their bed of ashes, what is the right treatment to adopt with respect to suckers, when they sometimes persist in throwing up four or five of them? I do not think anything is mentioned on this point in the directions given in THE COTTAGE GARDENER for their cultivation. Ought good bulbs to throw up so many suckers?"—J. J.

[It is by such suckers, or rather offsets, that choice Hyacinths are increased in Holland; but as we in this country have no desire to propagate the Hyacinth, and the young offsets draw from the strength of the parent bulb, it is always desirable to prevent them from doing that harm. They must, however, be allowed to grow sufficiently high, to enable one to take hold of the leaves. Then give them a gentle bend backwards and forwards, till they break off down to the bottom; only be careful not to break the scales of the bulb, as that might cause the whole bulb to decay. Some bulbs throw up more suckers, or offsets, than others. It is no disparagement to such to be so fruitful of increase.]

INTERPRETATION OF EXHIBITION RULES.

Among the Regulations of the Colchester Chrysanthemum Society are the two following:

"XII.—Plants exhibited in pots other than those in which they are grown will be disqualified."

"XIII.—The diameter to be taken an inch below the rim; the depth to be the same as the diameter."

Some Chrysanthemums were exhibited in bottomless pots, and were adjudged to be disqualified. We are asked—Were they

justly so adjudged? If the roots were allowed to grow unrestrainedly through the bottom into the soil or manure beneath, we think they were. The Society has determined certain dimensions for the pots, and the exhibitor has evaded that determination. He knew that the wish of the Society was to have Chrysanthemums grown in a certain bulk of soil, and by having pots of the prescribed dimensions, but with no bottoms to them, he did his best to evade that wish, whilst he appeared to conform to it. We say this without intending to impute a wrong motive to the exhibitor. It may have seemed to him a matter of indifference whether some of the roots grew through the drainage-hole, and some over the rim, or whether the whole were allowed to grow through the bottom. But it is not a matter of such indifference, for but comparatively few roots can escape over the rim, or through the drainage-hole. In all such cases, however, there needs no reasoning; for if an exhibitor, knowing the intention of a Society is, that each competitor shall grow his Chrysanthemums in a prescribed bulk of soil, adopts any mode of growing them by which they enjoy a larger amount of pasture, his plants ought to be disqualified. It was an unfair advantage over those who strictly and correctly obeyed the prescribed rule.

GROWING SQUAT CHRYSANTHEMUMS.

"I read with great pleasure the various articles written by Mr. Beaton, in your invaluable paper. His opinions are not to be slighted, as they are formed from an experienced mind. But often, when a man has been nursing a crotchet, and priding himself in seeing his labours developing themselves into something like success, down comes Mr. Beaton with, "It is of no use, it won't do." Mind, I pay great respect to the opinions of Mr. Beaton, and always endeavour to follow his advice; and, I think, if all did so, they would be not far from right. I trouble you with these few remarks in consequence of reading Mr. Beaton's condemnation of the mode of training the Chrysanthemum, in his account of the Crystal Palace Show. I have grown several specimens of the Pompones on the 'squat system,' as he calls it, which have been very much admired, and—may I say it—much to my gratification. I, for my part, do not see anything amiss in them. Next year, I intend to grow them in greater numbers, and under as many different systems as I can lay hold of. If Mr. Beaton would write a few lines solely on the mode of *training*, it would be of great advantage to me, and to others like me, who have no opportunity of seeing such specimens as are shown at the Crystal Palace."—MODUS, Ross.

[So long as the Chinese people do not insist on strangers—which is their meaning for barbarians—the necessity of their own practice of crippling and deforming the Chinese women, by barbarously cramping the feet of their female babes, as they cramp some kind of trees, to keep them very dwarf, so long we have no cause to complain of them on that score. And as long as Christian amateurs and gardeners choose to cramp, twist, and torture, any kind of plant against nature, in order to please their own fancies and that of their friends, Mr. Beaton will never have a word against them. But it is the duty of all those gardening writers, who have hold of the public ear, to blow the alarm, when they see nature *outraged* put in competition with nature *assisted*. Every plant, which is grown solely for its flowers, should be assisted by the gardener's art, to produce it in the greatest abundance, and to show it off to the best advantage in the most natural way. That is the lawful use of gardening in that branch. But when a plant is cultivated for any other use,—as a Peach tree against a wall, or a Gooseberry-bush in the border, or an Oak for use or ornament,—the gardener is allowed a certain latitude to depart from nature in appearance; but the less he takes advantage of the degree of this latitude, and the more closely he adheres to natural laws in his management of such plants, the more sure his success. Training Pompones in any manner, or shape, differing from their own natural growth, will never add one more flower to a plant, or make a single individual flower of better shape, no matter who may assert the contrary. A conservatory full of squat-trained Pompones, or Camellias, or any other kind of plant, could not be tolerated, by people of taste, for one single week. The degree of tiresomeness to the eye, in looking at them for one day, would be sure to turn them out. Squat-training requires three or four times more room, in a house, to show the same number of flowers, than natural training. By squat training, a blackleg may always impose on ladies, by selling them the ugliest frights of bad-habited plants

for good ones. Therefore, although I like to see squat-trained plants for short periods, I know well how they play upon the eye, and how they can be played with, like dice and cards ; and I denounce the system, on public grounds, with all my strength. I had my ears pulled for saying that ladies, good-looking ladies, and Chrysanthemums, would bear all the dressing one could give them, because people bought Chrysanthemums and expected to have them like the dressed flowers at the shows, and got disgusted with them, and with the dealers in them, because of the disappointment at not having such flowers as those that were dressed. Those who buy from what I say will find the antidote on the same page, for whenever I speak of dressed flowers, I mention them in the same breath in their true colours and natural form. The Chrysanthemum, like the Dahlia, is dressed after the best natural model ; and if our cross-breeders had a climate to ripen the seeds, as freely as those of the Dahlia, they would produce seedlings equal to the best-dressed flower, all incurved up to the centre petal. Few people thought it possible to have such Dahlias as they now see, when they first began to dress them ; but the dressed Dahlia, though lean and blear-eyed at the time, was so after Nature's own prime model ; and Nature at last asserted her rights in the perfection of the Dahlia flower, with very little dressing needed. If we had seen plants of the same Dahlias at the shows, during this long natural progress to perfection, we should have had the antidote with the poison, just as we have the Chrysanthemum at the present day, and the public taste would never run against dressed Dahlias, nor against those who dressed them. This is altogether different from squatting the Pompones, which is the height of beauty in the eyes of those who do them, as the torture of the Chinese women is in the eyes of those who cause it. But, thank goodness and good taste, we are not all Celestials.—D. BEATON.]

POLLEN, AS FOOD FOR ADULT BEES.

I HAVE long held the opinion, now advanced by Mr. Tegetmeier, that pollen *does* enter somewhat largely into consumption by the bees, as an article of food for themselves, as well as for the young brood. I have frequently seen partially-eaten pellets of farina on the alighting-board ; and, in my observatory hive, have noticed the eagerness with which a pollen-laden bee is followed by others, for the apparent purpose of anticipating her in her design of depositing the precious commodity in a cell. But this, I am aware, will prove nothing, as it may have been required for the ever-rapacious brood ; yet I can hardly believe, that the enormous quantity of 100 lbs. of this substance, which is said to be taken in by the bees of a hive in one season, is consumed by, or for the benefit of, the grubs alone.

Many years since, when feeding my bees in autumn, I, in consequence of holding this opinion, added to the syrup a quantity of fine flour, or arrowroot, and it was eagerly taken down by the bees.

I have, like Mr. Tegetmeier, and "A DEVONSHIRE BEE-KEEPER," tried to form stocks by placing the bees of two or more hives, which had been doomed to die by the brimstone match, in boxes more or less furnished with comb ; but I must confess, that the results have been far from satisfactory. One case, in particular, occurs to me. Having a bar-hive furnished with beautiful combs, I resolved to make a good stock, and joined the bees of four cottagers' skeps, which, with a splendid-looking queen, were safely located in their new and strange domicile. I gave them 10 lbs. of the finest honey just drained off from some of that season's harvest, which was carried down, stored, and much of it sealed, within the space of three or four days. I also supplied them with a considerable quantity of good syrup, so that they were amply provided for in this line. But in early spring the bees gradually dwindled away, and ere long were all defunct. At that time I strongly held the opinion, that the cause of the failure of this apparently most auspicious attempt was to be attributed to their having had no pollen to mix with their other food. I deem it to be more necessary to them, than mustard with roast beef to an Englishman ; or, to go further, than are bread and other farinaceous diet, to form, with a fair proportion of animal food, the healthy, enduring, and strong-bodied British navvy.

Mr. Tegetmeier states, in his paper on this subject, that he has this last autumn formed several good stocks by bees taken from cottagers' hives. I shall be very much obliged to him if he will inform the readers of THE COTTAGE GARDENER, or my-

self individually, how many of these shall be really good and serviceable colonies in April or May next. With all due deference to his known experience, I must beg to question the propriety of thus endeavouring to manufacture "good stocks," on two grounds ;—first, as to the liability to failure, which is very great ; secondly, as to the economy of the thing, which I consider more than doubtful. It is much better, in my opinion, to pay a fair price (varying from ten shillings up to twenty-five) for a swarm, or established stock, than to expend so much money and time in attempting to bolster up a rotten constitution. Still, if Mr. Tegetmeier has proved by experience that he has been able to form really good, strong, working colonies from saving these expatriated bees, I shall be very glad to find that I have come to an erroneous conclusion. On another point, also, I am at variance with many apiarians, my friend, the "DEVONSHIRE BEE-KEEPER," included ; and that is, as to the advantage of joining these ex-patriated bees to strong and flourishing stocks. I have, during the thirteen or fourteen years of my aparian experience, frequently adopted this plan ; but I cannot recall one instance in which I could confidently assume any material benefit had accrued to the hive which had thus received an accession, a *temporary* accession of numbers ; and, in many instances, I have had reason to believe that a positive injury was the result. This season, I have doubled swarms, and have placed single swarms into hives adjoining. If anything, the single swarms are the strongest. I wish it to be understood, that these remarks are only intended to apply to the augmentation of the numbers in already flourishing stocks, or in the case of fair sized swarms : I quite approve of the union of *weak* stocks in spring, and of weak swarms in summer. On this head also, the experience of other bee-keepers is much desired.

If I read Mr. Tegetmeier's views aright, he is of opinion that the original form of the cells in a honeycomb is round or cylindrical, and that lateral pressure is the cause of their assuming a hexagonal form. In this, although I do not accuse him of *Atheism*, or any other *ism*, I must totally differ from him. After the first foundation of the comb is made, the very smallest original portion of a cell is commenced in a rhomboidal form, and the hexagonal shape is carried out. I do not think his experiment of placing solid wax in a hive, in which cylindrical holes were made, worth a moment's attention, being so great a departure from their instinctive habits. It cannot for a moment be expected, that they could deal with a solid mass of wax in the same beautiful manner that they build the tiny walls of their cells, with the new and plastic material with which nature designed them to work. The same instinct which leads them to form their beautiful six-sided cells for the brood, and for the storing of food, is manifested in the formation of massive cylindrical cells for the rearing of the queens. I might say more on this head, but will leave it, in the hope that Mr. Tegetmeier will himself favour us with a further paper on the subject.—S. BEVAN FOX, Exeter.

NOTES FROM PARIS.

So many changes and improvements have been effected in the general aspect of the French capital during the last eighteen or twenty months, that I have thought a few notes at the present time might be interesting to your readers, and, therefore, I send you an account of what has been done in the way of gardening.

Of the many English words lately introduced to the French language, and generally adopted at the present day, none has become more familiar to the Parisians than our square ; and, judging from appearances, it is likely to become popular. Formerly the great majority of the people here had only the pavements of the *Boulevards*, or the open *Place*, on which they could meet and walk about ; for, though the Garden of Plants, as well as those of the *Tuileries* and the *Palais Royal*, are always open to them, we must remember, that those agreeable and popular places of resort are too far off for the great bulk of the population. As for the *Champs Elysées*, and the *Bois de Boulogne*, they are only within reach of the inhabitants of the West End. But all these places differ from the modern square. The *Palais Royal*, for instance, is only a large, open, gravelled promenade, with one or two rows of clipt trees, and two small enclosed flower gardens in the middle. What is called the garden of the *Tuileries*, is, for the most part, only so much bare ground densely shaded by the dark branches of old Chestnut trees. Of course, though such shade is agreeable enough in the hot weather of summer, it is too cold and damp during the rest of the year. There is, however, a part of the

Tuileries which is open enough, and there are two enclosed flower gardens, which are always very pretty in their way. But they are only seen from the outside, and none are admitted to walk in them. Now, the square is quite an innovation in every respect, and no one can say but that it is a great improvement.

The *Square de la Tour St. Jacques* has been open to the public for more than two years; but it is only now that it begins to assume the appearance of an English pleasure garden. It is situated near the river, in the quarter of the *Hôtel de Ville*, and it takes its name from the magnificent *tour* which rises in the centre to about a hundred feet. The ground is laid out with lawn, clumps of trees, shrubs, and flowers; but, of course, none are allowed to walk on the grass. Here and there, along the broad walks, are numerous elegant seats, and there are always plenty of people to occupy them. A neat little house, in wood, has been erected at one side for the keeper. The flower-beds are always well filled with the more showy bedding plants, as Pelargoniums, Pansies, Verbenas, China Aster, Mignonette, and Roses. At present there are some pretty masses of Veronicas, Dahlias, Hollyhocks, and Chrysanthemums, on the lawn. Here and there are some good examples of the Coniferæ, and other ornamental evergreens, as the graceful *Cedrus deodara*, *Weymouth Pine*, *Araucaria imbricata*, *Cryptomeria Japonica*, *Cedrus Lebanon*, and other favourite kinds.

In another part of Paris, and about ten minutes walk from this, it is the equally beautiful *Square of the Temple*, which, though begun last year, was only opened to the public two months ago; and nowhere could a public garden be a greater boon to the people; for this quarter may be fitly compared to Soho, of London, as the population is composed, for the most part, of poor artizans and their families, and the streets and dwellings are dingy enough. Several important alterations are to be carried out here, and there is plenty of room for improvement; but the first step has been the formation of a garden for the recreation of the inhabitants.

This *Square*, as it is very properly called, is somewhat larger than the other which I have noticed, measuring about 150 paces in length, and sixty in width. Like the other, it is enclosed by a fine iron railing, the heads of the spikes being gilt. It has been laid out with much taste and effect for the limited extent of the ground. At the further end there is a neat rockwork, formed of large blocks. Near the summit is a *jet d'eau*, which falls over the stones into a miniature lake below; and, I am informed, it is intended to have a pair of swans, or other waterfowl, to swim about in it. Near the same place is a venerable looking Willow tree, said to be nearly two centuries old. There are, also, some other trees of considerable dimensions, said to possess much historical interest. Several more, measuring about thirty feet high, were brought from the *Bois de Vincennes* last spring, and planted in suitable places. These have done very well, and may now be considered as fairly established.

The ground has been laid out in the most agreeable form, rising and falling here and there; and the large clumps near the sides have been filled with trees and shrubs, which, in a year or two more, will add much, not only to the beauty of the garden, but also of the whole neighbourhood. On the lawn are some large specimens of Coniferæ, planted singly. This is more like a pleasure ground than a flower garden. Still there are some gay beds of annuals, and other showy flowers, along the borders of the walks. Indeed, this is one of the neatest and most attractive gardens of the whole capital, and it is certain to become a favourite resort with hundreds who have been hitherto obliged to lounge about on the pavement of the *Boulevards*.

It is intended to form another square in the same way, in the large open place hitherto occupied as a cheap vegetable and fruit market, well known as the *Marché des Innocents*, and which has just been vacated by its occupants, who are now provided with better accommodation in one of the divisions of the *Halles Centrales*, a magnificent iron structure, with which we have nothing in England to compare.

The new square promises to be even finer than either of the other two, and it will form a most appropriate pendant to the vast and elegant edifice beside it. There is a large ornamental fountain already in the centre of the ground, and this is capable of being turned to good account by the gentleman to whom the laying out has been confided. In a month or two more the whole aspect of the place will be changed, and, instead of the filth and babble of a huckster's market, we shall have a beautiful garden and promenade.

During the spring and autumn of this year, great planting

operations have been carried out all over Paris. About forty large Horse Chestnuts were brought from Vincennes, and replanted on the north and south sides of the *Bourse*. But this operation was delayed too long in the season, and the warm summer's sun and dry weather have made it very doubtful if half of them will assume their wonted appearance before some years have past. Some have been so much scorched as to make their removal more than probable. The authorities here have a strange fondness for the Horse Chestnut, which I think, of all others, the most unsuitable for embellishing a city, owing to its dense and heavy outline. In any case, there was not much hope for old, full-sized trees, lifted and transplanted just when the hot weather was about to set in. The trunks of those planted round the *Bourse* are full twenty inches in diameter. The process of lifting and planting is that which has been well known in England for many years. The tree is lifted with a ball, in the old way, as much earth as possible being secured to the roots; then it is suspended in the centre of a large machine, on wheels, and drawn by horses to the place required. The process of lifting up and letting down is effected by rollers at each end of the machine, which can be worked with the greatest ease. Indeed, the only heavy work in the operation is the removal of the earth near the roots, preparatory to lifting. Several dozens of Chestnuts, equally large, have been planted in a group round the *Fontaine de Palmier*, near the *Chambre de Notaires*, and the *Square St. Jacques*; but these were planted in the autumn, when the hot weather was over, and they seem to be doing well.

During the last few months, an important alteration has been effected in front of the Palace of the *Tuileries*, on the west side. A considerable extent of ground, formerly open to the public, has been taken in, and laid out as a pleasure ground for the use of the Imperial household. This garden is about a hundred yards wide, and extends from the *Rue de Rivoli* to the *Quai*, a distance of nearly two hundred yards. It has been laid out in smooth, level lawn, and broad winding walks; the whole enclosed by an elegant railing, and ornamented with fine statues, so that there is now a beautiful private garden attached to the Palace.

In the *Champs Elysées* a great many young trees, of good kinds, have lately been planted in the numerous vacancies that existed for some time, and this popular promenade is now more beautiful than it has ever been.

The large open space that formerly existed on the south side of the *Palais de l'Industrie* has also been tastefully laid out in broad, winding walks, and large clumps of trees, shrubs, and flowering plants; so that this part of the *Champs Elysées*, though quite open, has at present the appearance of a garden. A portion of it is composed of smooth lawn, which is studded here and there with single specimens of *Araucaria imbricata*, *Cedrus deodara*, *Cryptomeria japonica*, *Pinus Douglassii*, and many other choice Coniferæ.

At the present time, the fine *Boulevards*, extending from the church of the *Madeleine*, eastward to the *Boulevard de Sébastopol*,* are the scene of active operations.

In the Revolution of 1848, all the fine large trees that grew on these *Boulevards* were ruthlessly cut down to form barricades; and though others were subsequently planted in their places, they have during ten years made little or no progress. Of course, the cause of failure has been the unfavourable condition in which they were planted, for their roots seem to have been provided with nothing better than lime rubbish for their support. At present workmen are engaged in forming wide trenches, which are filled with good soil. All the old half-dead trees are removed, and others put in their places. These are generally young, healthy trees, from fifteen to thirty-five feet high, belonging to different genera of Fabaceæ,—as Sophora, Robinia, and Acacia; but there are also a few Maples, Platanus, Elms, and others, which are likely to do well. Young trees of *Platanus occidentalis* have been planted round the central market and near the *Porte St. Martin*. These have grown very well this summer, and their broad, lively-green foliage has an excellent effect. This tree will probably be extensively planted on the *Boulevards*, for it is seen that its rapid growth will insure plenty of shade in a few years.

The flower market near the *Palais de Justice* is certain to undergo some change very soon, owing to the construction of a new bridge across the river, in the line of the *Boulevard de Sébastopol*, and which will at least cut off a portion of the ground on which the market is held at present.

* This ought to be written *Sébastopol*, as in Russian, in which language the letter *v* has exactly the form of our *b*, and no doubt this circumstance has given rise to the orthography which is in general use.

Such are the principal changes which have been made, and which are now being made, to embellish Paris, and render it more beautiful and healthy than it has ever been before. Many more are in contemplation, but several years will be required to carry them out, and to make them fully effective.—K.

NEW AND RARE PLANTS.

NEPENTHES VILLOSA (*Hairy Pitcher Plant*).

THIS native of the Borneo mountains was sent to the Messrs. Veitch, of the Exeter and Chelsea Nurseries, by their collector, Mr. Thomas Lobb. The "pitchers" are more than a foot long, and the curious broad margins to the sides of the elongated mouth resemble the gills of a fish in structure and size, and almost in colour.—(*Bot. Mag.*, t. 5080.)

PLOCOSTEMMA LASIANTHUM (*Woolly-flowered Plocostemma*).

This, also, is a native of Borneo, from whence it was imported by Mr. Low, of the Clapton Nursery. It is allied to *Hoya*. Indeed, by Blume, it is called *Hoya lasiantha*. Flowers pendant, orange tawny, blooming in July.—(*Ibid.*, t. 5081.)

THUNBERGIA NATALENSIS (*Natal Thunbergia*).

Messrs. Veitch received the seeds of this greenhouse plant from Mr. Cuming, who obtained them at Natal. The plants bloomed in July, 1858. Flowers blue, with yellow throat.—(*Ibid.*, t. 5082.)

NÆGELIA MULTIFLORA (*Many-flowered Næglia*).

It has also been called *Gloxinia multiflora* and *Achimenes amabilis*. Sir W. Hooker, at first, thought it a white-flowered variety of *Gesnera zebra*. It is "a native of the eastern Cordillera, of Oxaca, at an elevation of 2000 to 3000 feet." It flowers in the stove during autumn.—(*Ibid.*, t. 5083.)

CŒLOGYNE PANDURATA (*Fiddle-shaped Calogyne*).

Imported from Borneo, by Mr. Low, of the Clapton Nursery. It blooms in December. Flowers green, marked with blackish-purple lines. It is fragrant.—(*Ibid.*, t. 5084.)

TO CORRESPONDENTS.

MAKING BOUQUETS AND CHRISTMAS TREES (*A. Macallister*).—Mr. Kidd, of the Stud House, at Hampton Court, being, as we believe, the best maker of these nosegays in the three kingdoms, and being not a stranger to these pages, we would invite him—rather than Mr. Beaton, who is not a practical hand at the business—to explain the manner of manufacture. As for Christmas trees, they are loaded entirely on the principle of fancy work, for which there is no rule to show if this or that fancy is nearer or more remote from good taste. But in making nosegays, the rules for colours, and combination of colours, can be applied to them with more surely than in planting the same plants side by side. Therefore, a nosegay can be judged critically; a Christmas tree cannot.

VARIOUS (When Convenient).—You will find the Mirabelle Plum at Messrs. Rivers, Nurserymen, Sawbridgeworth. The Sweet Potato (*Convolvulus Batata*), cannot be grown in the open ground in England.

BLACK BEETLES (*A recent Subscriber*).—Use "Chase's Beetle Poison." It is sold by druggists. To feed your bees, put a saucer on the flat top of the hive, and cover it with a small garden-pot, with its drainage-hole corked, after opening the hole in the hive's top.

CEMENT FOR AQUARIA (*Enquirer*).—We have given one at page 102 of the present volume.

WOODSIA (*H.B.*).—Mr. Sims, Nurseryman, Foot's Cray, Kent, can supply you, probably.

BEE-KEEPING (*A. Y.—, an Old Subscriber*).—Your inquiries, as a young bee-keeper, embrace a wide field, and many of them have been answered in our previous pages, which you would do well to refer to. In particular, the late Mr. Payne's hive has frequently been described. You have an illustration of it, and some others of straw, in Taylor's "Bee-keeper's Manual" (which you say is in your possession), at page 29, Fifth Edition, which any good hive-maker might follow. You will find, also, illustrations of different kinds of floor-boards, any one of which would enable you to overcome the difficulty you speak of, regarding lifting and weighing your hives. Some other of your queries are fully discussed in the same work, and particularly those in reference to the different modes of uniting and feeding stocks, which you ought to have attended to two months ago. The season is now too far advanced. Our experience of foreign honey, for bee food, is somewhat limited; but the cheap kind, in the shops you mention, is, probably, more or less adulterated. We apprehend that the bees know their respective homes quite well enough, without the aid of the painter to the alighting boards, as you suggest; but the families ought not to be placed too near together. You labour under error, in supposing that Mr. Taylor anywhere advocates the use of chloroform, as applied to bees. As an example of the disastrous effects of such an agency, we direct your attention to a communication in our Number 518, page 354. In reference to some other points of doubt, remarks upon them will be found in our reply to a correspondent, an "Apprentice Apiarian," in Number 526, page 60.

CORROSIVE SUBLIMATE FOR DESTROYING WORMS (*E. Marshall*).—Remember that it is a deadly poison, and if fowls eat the worms killed by it, they may be fatal to the fowls. Dissolve two ounces of corrosive sublimate (bichloride of mercury), in every forty gallons of water, and soak the ground with it thoroughly. It is most effectually applied when the worms are near the surface, in moist weather.

NAME OF FERN (*N. R. Hayward*).—Your Fern is the *Cystopteris fragilis*, though bearing a little resemblance to the dentated variety of that species.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

NOVEMBER 30th and DECEMBER 1st. GLASGOW. Sec., Mr. R. M'Cowen. Entries close November 17th.

DECEMBER 7th and 8th. NORTH DURHAM. Secs., R. C. Coulson, J. T. Duncan, and T. Wetherell. Entries close November 22nd.

DECEMBER 8th. WILTSHIRE. Sec., F. W. Phillips, Devizes. Entries close November 30th.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

DECEMBER 29th and 30th. BURNLEY AND EAST LANCASHIRE. Sec., Angus Sutherland. Entries close December 10th.

JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs., R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

N.B.—Secretaries will oblige us by sending early copies of their lists.

BIRMINGHAM POULTRY EXHIBITION.

(BY EXPRESS.)

THE following is the prize-list. We shall give full particulars next week :—

SPANISH.—CUP, W. W. Brundrit, Churchfield House, Runcorn. Second, J. K. Fowler, Prebendal Farm, Aylesbury. Third, Miss H. Busst, Walsall. Fourth, Mrs. J. C. Hall, Surrey House, Sheffield. **Spanish Hens**.—First, Miss H. Busst, Walsall. Second, J. Garlick, Hygeia Street, Everton, Liverpool. **Chickens**.—First, J. R. Rodbard, Aldwick Court, Wrington, Bristol. Second, Miss M. L. Rake, Brandon Hill, Bristol. Third, J. Clews, Wallhouse Street, Walsall. Fourth, W. Moore, Hanley Castle, Upton-upon-Severn. **Pullets**.—First, Mrs. J. C. Hall, Surrey House, Sheffield. Second, Mrs. Fowler, Prebendal Farm, Aylesbury.

DORKING (Coloured).—CUP, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescot. Second, Mrs. H. Smith, the Grove, Cropwell Butler, Bingley, Nottinghamshire. Third, J. Shaw, Hunsbury Hill, Northampton. **Dorking Hens**.—First, Mrs. W. Hornby, Knowsley Cottage, Prescot. Second, H. W. B. Berwick, Helmsley, York. **Chickens**.—First, Mrs. W. Hornby, Knowsley Cottage, Prescot. Second, C. H. Wakefield, Malvern Wells. Third, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Fourth, Lady S. Desveux, Drakeelow Hall, Burton-upon-Trent. **Pullets**.—First, Sir H. Desveux, Drakeelow Hall. Second, Rev. G. Hustler, Appleton, Tadcaster, Yorkshire.

DORKING (White).—First, H. Alsopp, Malvern. Second, J. Robinson, Vale House, Garstang, Lancashire. **Chickens**.—First and Second, Capt. Beardmore, Uplands, Fareham, Hampshire.

COCHIN-CHINA (Cinnamon and Buff).—CUP, H. Tomlinson, Balsall Heath Road, Birmingham. Second, T. H. Stretch, Marsh Lane, Bootle, Liverpool. Third, D. S. Moore, Teddesley House, Walsall. **Chickens**.—First, E. C. Stretch, Marsh Lane, Bootle, Liverpool. Second, G. Fell, Warrington. Third, G. C. Peters, 101, High Street, Birmingham.

COCHIN-CHINA (Brown and Partridge-feathered).—First, Mrs. Cartwright, Oswestry. Second, J. Busst, jun., Walsall. Third, Master J. H. Cattell, Moseley Wake Green, Birmingham. **Chickens**.—First, D. S. Moore, Teddesley House, Walsall. Second, H. Tomlinson, Balsall Heath Road, Birmingham. Third, Miss V. Musgrave, West Tower, Aughton, Liverpool.

COCHIN-CHINA (White).—CUP, R. Chase, Moseley Road, Birmingham. Second, W. Copple, Eccleston, Prescot, Lancashire. **Chickens**.—First, G. Lamb, Red Hill House, Compton, Wolverhampton. Second, C. R. Titterton, Birmingham.

BRAHMA POOTRA.—First, G. Botham, Wexham Court, Slough. Second, R. Teebay, Fulwood, Preston, Lancashire. **Chickens**.—First, G. Botham, Wexham Court, Slough. Second, R. Teebay, Fulwood, Preston.

POLISH (Black, with White Crests).—First, J. Dixon, North Park, Bradford, Yorkshire. Second, T. Battye, Holmbridge, Yorkshire. Third, G. Ray, Ivy Cottage, Minestead, Lyndhurst. **Chickens**.—First and Second, T. Battye, Holmbridge, Huddersfield. Third, G. Ray, Ivy Cottage.

POLISH (Golden).—First, J. Dixon, North Park, Bradford, Yorkshire. Second, Mrs. Pettat, Ashe Rectory, Basingstoke, Hampshire. Third, J. F. Greenall, Grappenhall Hall, Warrington. **Chickens**.—First, G. S. Fox, The Court, Wellington, Somerset. Second and Third, Mrs. Pettat, Ashe Rectory, Basingstoke.

POLISH (Silver).—First, J. F. Greenall, Grappenhall Hall, Warrington. Second, Mrs. C. S. Dixon, North Park, Bradford, Yorkshire. Third, F. H. Greenall, Grappenhall, Warrington. **Chickens**.—First, Lieut.-Colonel Clowes, Froxmer Court, Worcester. Second, G. C. Adkins, The Lightwoods, Birmingham. Third, Mrs. Pettat, Ashe Rectory, Basingstoke, Hampshire.

POLISH (any other Variety).—First, Lieut.-Colonel Clowes, Froxmer Court, Worcester. Second, R. Fryer, Hinton Road, Hereford.

HAMBURGH (Golden-pencilled).—First, J. Lowe, Whitmore House, Birmingham. Second, C. R. Titterton, Birmingham. Third, Mrs. W. C. Wormell, Rice House, Liverpool. **Chickens**.—First, J. S. Rutter, Hands-

worth, Birmingham. Second, W. Pierce, Hartford, Northwich, Cheshire. Third, Messrs. Carter and Gaultier, Poulton-le-Fylde.

HAMBURGH (Golden-spangled).—First, W. R. Lane, Bristol Road, Birmingham. Second, J. B. Chune, Lincoln Hill House, Coalbrookdale. Third, Messrs. Haigh and Hartley, Tip Hill Bank, Holmfirth. Chickens.—Cup, and Second, J. B. Chune, Lincoln Hill House, Coalbrookdale. Third, Mrs. T. L. Fellowes, Beighton Rectory, Norfolk.

HAMBURGH (Silver-pencilled).—First, E. Archer, Malvern. Second, Miss E. Dixon, North Park, Bradford, Yorkshire. Third, J. Munn, Stacksteads, Manchester. Chickens.—Cup, E. Archer, Malvern. Second, T. Keable, Rowde Field Farm, Devizes, Wiltshire. Third, Mrs. T. Keable.

HAMBURGH (Silver-spangled).—Cup, Rev. C. R. Pettat, Ashe Rectory, Basingstoke. Second, W. Pierce, Hartford, Northwich, Cheshire. Third, Mrs. Teebay, Fullwood, Preston, Lancashire. Chickens.—First, W. Ludlam, Bradford, Yorkshire. Second, E. T. Archer, Malvern. Third, W. Dable, Farnsfield, Southwell, Nottinghamshire.

GAME (White and Piles).—Cup, F. Sabin, 25, Bull Street, Birmingham. Second, G. Robinson, Thorpe Hall, Worksop, Nottinghamshire. Third, J. Camm, Farnsfield, Southwell, Nottinghamshire. Chickens.—First, J. Camm. Second, T. Whitaker, Melton Mowbray, Leicestershire. Third, F. Sabin.

GAME (Black-breasted, and other Reds).—Cup, G. W. Moss, The Beach, Aigburth, Liverpool. Second, T. Robinson, Ulverstone. Third, Capt. W. Hornby, Knowsley Cottage, Prescot. Fourth, N. N. Dyer, Bredon, Worcestershire. Chickens.—First, J. Bradwell, Southwell, Nottinghamshire. Second, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Third, H. Horton, Sansome Walk, Worcester. Fourth, Mrs. W. Wright, West Bank, Widnes, Warrington.

GAME (Blacks, and Brassy-winged except Greys).—First, F. Munn, Temple Laughern, Worcester. Second, W. Ballard, Woodcote Lodge, Leamington. Third, Mrs. Dawson, Selly Oak, Birmingham. Chickens.—First and Third, Mrs. Dawson, Selly Oak, Birmingham. Second, W. Ballard, Woodcote Lodge, Leamington.

GAME (Duckwings, and other Greys and Blues).—First, W. Dawson, Selly Oak, Birmingham. Second, A. Sutherland, Burnley, Lancashire. Third, G. Robinson, Thorpe Hall, Worksop. Chickens.—First, W. H. Swann, Farnsfield, Southwell, Nottinghamshire. Second, H. Lowe, Comberford, Tamworth. Third, J. Brindley, Union Hall, Kinver, Staffordshire.

MALAY.—First, C. Ballance, 5, Mount Terrace, Taunton, Somersetshire. Second, J. J. Fox, Devizes, Wiltshire. Chickens.—First, J. G. Attwater, Hollingwood Farm, Cubberley, Cheltenham. Second, C. Ballance.

ANY OTHER DISTINCT BREED.—First, G. M. Kettle, Dallicott House, Bridgnorth; J. Smith, Henley-in-Arden; T. Bridges, Bridge Cottage, Croydon. Second, Mrs. Robinson, Mansfield Woodhouse, Nottinghamshire; W. Dawson, Hopton Mirfield, Yorkshire; H. M. Hitchcock, Dunchurch, Rugby.

CLASSES FOR SINGLE COCKS.

SPANISH.—First, W. Moore, Hanley Castle, Upton-upon-Severn. Second, T. Robinson, Ulverstone, Lancashire. Third, W. M. Moore, Hanley Castle, Upton-upon-Severn.

DORKING.—First, W. Robinson, Vale House, Garstang. Second, H. Beale, Wexham, Slough. Third, Rev. J. Hill, The Citadel, Hawkstone, Shropshire.

COCHIN-CHINA.—First, Miss Tomlinson, Balsall Heath Road, Birmingham. Second, E. Herbert, Powick, Worcestershire.

BRAHMA POOTRA.—First, J. Craigie, Woodlands, Chigwell, Essex. Second, C. Dain, Southampton.

POLISH.—First, P. H. Jones, High Street, Fulham, near London. Second, G. S. Fox, The Court, Wellington, Somersetshire.

HAMBURGS (Golden-pencilled).—First, R. R. Clayton, Hedgerley Park, Slough. Second, Mrs. T. L. Fellowes, Beighton Rectory, Acle, Norfolk.

HAMBURGH (Golden-spangled).—First, W. C. Worrall, Rice House, Liverpool. Second, Messrs. Haigh and Hartley, Tip Hill Bank, Holmfirth, Yorkshire.

HAMBURGH (Silver-pencilled).—First, E. Archer, Malvern. Second, E. T. Archer, Malvern.

HAMBURGH (Silver-spangled).—First, J. Robinson, Vale House, Garstang, Lancashire. Second, Mrs. Teebay, Fulwood, Preston.

GAME.—First, Mrs. R. Swift, Southwell, Nottinghamshire. Second, Miss E. Sutherland, Burnley, Lancashire. Third, W. Archer, Malvern.

SWEEPSTAKES FOR GAME COCKS.

First, Capt. W. Hornby, R.N., Knowsley Cottage, Prescot. Second, G. W. Moss, The Beach, Aigburth, Liverpool. Third, A. Sutherland, Burnley, Lancashire.

BANTAMS (Gold-laced).—Cup, T. H. D. Bayly, Ickwell House, Biggleswade, Bedfordshire. Second, M. Leno, jun., Harpenden, Hertfordshire.

BANTAMS (Silver-laced).—First, M. Leno, jun., Harpenden, Hertfordshire. Second, Mrs. Cruwys, Cruwys Morechard, Devonshire.

BANTAMS (White).—First, Mrs. Cruwys, Cruwys Morechard, Devonshire. Second, Mrs. Titterton, King's Norton, Birmingham.

BANTAMS (Black).—First, T. H. D. Bayly, Ickwell House, Biggleswade, Bedfordshire. Second, G. Bradwell, Southwell, Nottinghamshire.

BANTAMS (Game).—Cup, R. Swift, Southwell, Nottinghamshire. Second, I. Thornton, Heckmondwike, Leeds.

BANTAMS (any other Variety).—First, J. Chessim, Ickwell House, Biggleswade, Bedfordshire. Second, Rev. T. Green, Badby, Northamptonshire.

GESEES (White).—First, Miss M. E. Fowler, Prebendal Farm, Aylesbury. Second, W. Manfield, jun., Dorchester. Third, J. Price, Londonderry, Bedale, Yorkshire.

GESEES (Grey and Mottled).—Cup, Miss E. A. Fowler, Prebendal Farm, Aylesbury. Second, Master J. K. H. Fowler, Prebendal Farm, Aylesbury. Third, T. Reading, Fulford Hall, Solihull.

DUCKS (White Aylesbury).—Cup, J. Weston, Aylesbury. Second, Mrs. Seamons, Hartwell, Aylesbury. Third, Miss M. E. Fowler, Prebendal Farm, Aylesbury.

DUCKS (Rouen).—First, B. H. Brooksbank, Tickhill, Rotherham. Second, W. G. K. Breavington, Vicarage Farm, Hounslow, Middlesex. Third, Hon. G. Howard, Charlton, Malmesbury.

DUCKS (Black East Indian).—First, F. W. Earle, Edenhurst, Prestow, Lancashire. Second, Miss S. Perkins, The Cottage, Sutton Coldfield.

DUCKS (any other Variety).—First, Master Dixon, North Park, Bradford. Second, Right Hon. Lord Berwick, Cronkhill, Shrewsbury.

TURKEYS.—Cup, W. Dolby, Syston, Grantham. Second, G. Daft, Halton, Southwell, Nottinghamshire. Third, J. Grinell, Ellesborough, Buckinghamshire. Pouls.—First, Miss A. Fookes, Whitechurch Blandford. Second, Right Hon. Viscount Hill, Hawkstone, Shropshire. Third, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk.

CRYSTAL PALACE EXHIBITION OF CANARIES AND OTHER CAGE BIRDS.

NOVEMBER 22, 23, and 24.

THE following is a list of the prizes awarded at this very excellent Show. We shall give a few comments next week:—

CANARIES

Clear Yellow Norwich.—First and Second, W. Minns, Bath House, St Martin-at-Oak, Norwich. Highly Commended, B. Blyth, 3, South Street, Chelsea.

Clear Buff Norwich.—First, T. Banfater, Bath House, St. Martin-at-Oak, Norwich. Second, F. Willis, Bath House, St. Martin-at-Oak, Norwich.

Clear Yellow Belgium.—First, J. Lingard, Star Inn, Old Street, Ashton-under-Lyne. Second, W. Young, 128, High Street, Oxford. Highly Commended, W. Clarke, Tradesman's Mart, Lower Parliament Street, Nottingham. Commended, C. Coles, Fareham, Hants.

Clear Buff Belgium.—First, J. Lingard, Star Inn, Old Street, Ashton-under-Lyne. Second, W. Clarke, Tradesman's Mart, Lower Parliament Street, Nottingham. Commended, C. Coles, Fareham.

Variegated Yellow Belgium.—First, W. Phillips, Church Street, Old Basford, Notts. Second, T. Mason, Commerce Street, Nottingham. Highly Commended, J. Widdowson, Walnut Tree Lane, Nottingham.

Variegated Buff Belgium.—Second, J. Widdowson, Walnut Tree Lane, Nottingham. Commended, T. Mason, Commerce Street, Nottingham. (First prize withheld.)

Marked Yellow Belgium.—Prize withheld.

Marked Buff Belgium.—Prize withheld.

Clear Fellow Crested.—Prize withheld.

Clear Mealy Crested.—Prize withheld.

Blue-spangled Lizard.—First, W. Clarke, Tradesman's Mart, Lower Parliament Street, Nottingham. Second, T. Mason, Commerce Street, Nottingham.

Silver-spangled Lizard.—First, I. Stevenson, New Castle Street, Old Basford, near Nottingham. Second, G. E. Attwood, Sir Isaac's Walk, Colchester.

Golden-spangled Lizard.—First, W. Clarke, Tradesman's Mart, Lower Parliament Street, Nottingham. Second, T. Mason, Commerce Street, Nottingham.

Mealy London Fancy.—First and Third, F. Hook, 28, Amelia Street, Walworth Road. Second, J. Waller, 49, Tabernacle Walk, near Finsbury Square. Highly Commended, F. Hook, 28, Amelia Street, Walworth; J. Paice, 75, High Street, Borough; J. Waller, 49, Tabernacle Walk, near Finsbury Square.

Jonque London Fancy.—First, J. Paice, 75, High Street, Borough. Second and Third, J. Waller, 49, Tabernacle Walk, near Finsbury Square. Highly Commended, J. Paice; J. Waller.

Mealy Goldfinch Mule.—First, Messrs. Calvert and Buckle, 58, Bootham, York. Second, J. Lingard, Star Inn, Old Street, Ashton-under-Lyne. Highly Commended, W. Arthur, 27, Peter Street, Soho; J. Arundell, 49, Newcastle Street, Nottingham.

Jonque Goldfinch Mule.—First, A. D. Willoughby, Caen Lodge, Twickenham. Second, W. Arthur, 27, Peter Street, Soho. Highly Commended, H. Hanly, Hyde Park Barracks. Commended, Messrs. Calvert and Buckle, 58, Bootham, York; T. Mason, Commerce Street, Nottingham.

Mealy Linnet Mule.—Prize withheld.

Jonque Linnet Mule.—Prize withheld.

Any other variety of Canaries or their Mules.—First, A. Dart, 117, High Street, Guildford (Cinnamon or Dove). (Second prize withheld.)

BRITISH BIRDS.

Bullfinch.—Prize, A. D. Willoughby, Caen Lodge, Twickenham. Highly Commended, E. Hawkins, 6, Bear Street, Leicester Square.

Chaffinch.—Prize, C. Hutt, Belvedere Road, Upper Norwood, Surrey.

Goldfinch.—Prize, E. W. Major, Norwood, Surrey. Highly Commended, A. D. Willoughby, Caen Lodge, Twickenham.

Hawfinch.—Prize, Master E. Bartlett, York Crescent, Lower Norwood, Surrey.

Crossbill.—No entry.

Linnet.—None exhibited.

Skylark.—Prize, E. Hawkins, 6, Bear Street, Leicester Square.

Woodlark.—Prize, E. Hawkins, 6, Bear Street, Leicester Square.

Robin.—Prize, E. Hawkins, 6, Bear Street, Leicester Square.

Titmouse.—No entry.

Blackbird.—Prize, H. Bayman, Woodbine Grove, Penge.

Song Thrush.—Prize, A. J. Moore, Fareham, Hants. Highly Commended, E. Hawkins, 6, Bear Street, Leicester Square.

Thrushes of any other variety.—Prize, G. Fletcher, Beckbury, near Shifnal, Salop (White Thrush). Highly Commended, E. Hawkins, 6, Bear Street, Leicester Square (Mistletoe Thrush).

Starling.—Prize, H. Henton, 308, Rotherhithe Street, Rotherhithe. Words spoken by the bird—Jacob, in several different ways; calls the fowls and dogs; imitates the Canary, and whistles “The Oyster Girl.” Is very tame.

Buntings.—No entry.

Jay.—None exhibited.

Magpie.—Prize, F. G. Dutton, Lydiard House, Swindon.

Jackdaw.—No entry.

Any other variety of British Birds.—Prize, W. I. Bicknell, 22, Upper Ebury Street, Pimlico (Turtle or Ring Doves).

Hybrids or Mule Birds of any variety except Canary Mules.—Prize, J. Beach, Little Horton Lane, Bradford, Yorkshire (bred from Goldfinch cock and Bullfinch hen). Highly Commended, H. Hanly, Hyde Park Barracks (Hybrid between a Goldfinch and Greenfinch); E. T. Keys, 51, Beresford Street, Woolwich, Kent (Hybrid between Skylark and Sparrow).

BIRDS OF PASSAGE AND MIGRATORY BIRDS.

Blackcap.—Prize, H. Hanly, Hyde Park Barracks.

Garden Warbler.—Prize, H. Hanly, Hyde Park Barracks.

Golden Oriole.—No entry.

Nightingale.—Prize, H. Bayman, Woodbine Grove, Penge. Highly Commended, J. Aldridge, 145, High Street, Portsmouth; J. Rose, 5, Golden Ball Street, Norwich.

Redpole.—No entry.

Redstart.—No entry.

Siskin, or Aberdevine.—Prize, A. D. Willoughby, Caen Lodge, Twickenham.

Titlark, or Tree Pipit.—Prize, H. Hanly, Hyde Park Barracks.

Whitethroat.—Prize, H. Hanly, Hyde Park Barracks (the Greater Whitethroat).

Golden Crested Wren.—No entry.

Any other variety.—Prize, H. Hanly, Hyde Park Barracks (Black and White Wagtail).

FOREIGN BIRDS.

Grey Parrot.—First, W. Cox, Kilburn Villas, Central Hill, Upper Norwood. Words spoken by this bird—Walk in, Mr. Cox; Polly wants her breakfast; Puss; mocks the cat; calls the dog Toby, and then laughs; Walk in, Sir; Who are you? Polly is a darling. Speaks many names, Elizabeth, &c., &c. May be handled by strangers. Is very quiet. Second, E. Hawkins, 6, Bear Street, Leicester Square.

Green Parrot.—Second, J. Hay, 18, Old Gravel Lane, Wapping (South American). Words spoken by this bird—Eliza, George, Charles, Charley; Polly, Polly; Oh you pretty Polly; laughs; imitates talking, and children crying. Quick in imitating sounds and tunes. A very good-tempered bird. (First prize withheld.)

Any other variety of large Parrots.—Prize, W. W. Westbrooke, Star Hotel, Anerley, near Norwood (Turon, Western Australia).

Lore Birds, Australian Grass Paroquets, or any other variety of small Parrots.—First, E. Hawkins, 6, Bear Street, Leicester Square (Australian Grass Paroquets). Second, A. D. Bartlett, York Crescent, Lower Norwood (Grass Paroquets, crimson backed, bred in captivity). Highly Commended, E. Hawkins (Lore Birds, and Australian Paroquets).

Paroquets.—First, W. H. Darbourne, Alfred Villa, Kensall Green, Middlesex (Australian Rosehill). Second, W. Cox, Kilburn Villas, Central Hill, Upper Norwood (Cockatoos). Highly Commended, Miss E. Darbourne, Hawthorn Cottage, Framfield, Sussex (Australian Rosehill); A. S. Davey, Swanscombe, Kent (Green Leek); F. G. Dutton, Lydiard House, Swindon (Bengal or Rose-ringed Paroquet).

Cockatoos.—First, W. Emm, Queen's Arms, Watford Station, Herts (Australian Cockatoo). Second, Mrs. Thompson, 8, Albert Terrace, Richmond Road, Westbourne Grove, Bayswater (Rose-breasted Cockatoo). Words spoken by this bird—Pretty Boy, Polly, Puss, How do you do. Calls by name several members of the family, &c. Highly Commended, H. N. Whitaker, 90, Charlotte Street, Fitzroy Square (Orange-crested Cockatoo). This bird is very amusing,—laughing, and imitating dogs, cats, fowls, &c. Is one of the best talking birds in England.

Chinese Lories, Lory Grande, or any other variety.—Prize, E. Hawkins, 6, Bear Street, Leicester Square (Lory Grande).

Macaws of any variety.—Second, — Adkins, Esplanade, Scarborough (Crimson and Green Macaw). (First prize withheld).

Diamond Sparrow, Coral-necked Sparrow, Java Sparrow.—First, E. Hawkins, 6, Bear Street, Leicester Square (Java Sparrows). Second, Miss C. Bartlett, York Crescent, Lower Norwood (Diamond Sparrows; bred in captivity). Highly Commended, T. Walker, Pembury Road, Tunbridge Wells (Diamond Sparrow); H. Duckworth, jun., 1, Lansdowne Villas, Downham Road (Java Sparrows).

Nonpareils, Indigo-blue Bird, Bishop Bird.—First and Second, E. Hawkins, 6, Bear Street, Leicester Square (Nonpareil, and Indigo-blue Bird).

Wax Bills of various kinds.—First and Second, E. Hawkins, 6, Bear Street, Leicester Square (Orange-checked Wax Bills, and Bronze Manikins).

Virginian Nightingale, Cardinal.—First and Second, E. Hawkins, 6, Bear Street, Leicester Square (Red-crested Cardinal).

Whidah Bird.—Prize, H. Hanly, Hyde Park Barracks.

Foreign Larks.—No entry.

Mocking Birds.—Prize, E. Hawkins, 6, Bear Street, Leicester Square (American Mocking Bird).

Any other variety of Foreign Birds.—First, Miss J. Bartlett, York

Crescent, Lower Norwood (Californian Quail; bred in captivity). Second, E. Hawkins, 6, Bear Street, Leicester Square (Tropic Oriole). Highly Commended, T. Walker, Pembury Road, Tunbridge Wells (Australian Partridge, Quail).

JUDGES OF CANARIES.—Mr. James T. Willmore, A.R.A., and Mr. Thomas Moore.

JUDGE OF BRITISH BIRDS.—Mr. William Kidd.

JUDGE OF FOREIGN BIRDS.—Mr. William Goodwin.

IS ERGOT A CAUSE OF BARRENNESS IN COWS?

I ENCLOSE a few specimens of Ergot, found in the fields near my residence. I should have sent some from the finer grasses, but the specimens are small.

For some years, there have been a greater number of barren cows in this neighbourhood than formerly, and no one could tell the cause. Having read “Bights of the Wheat,” published by the Religious Tract Society, I thought I should be able to find out the cause; and on making a search in the pastures, I have found a great number of specimens, sufficient to convince me that Ergot was the chief cause of barrenness. I have been told, by a medical man, that small doses, acting on the uterus, will produce barrenness, and paralyse the other organs in connection with it, causing great debility in the system, as is the case with some cows now, although well-cared for in other respects.—**RUSTIC ROBIN**.

[With this communication we received specimens of various grasses,—such as *Dactylis glomerata*, or round-panicked Cock's-foot; *Lolium perenne tenui*, slender perennial Rye-grass; and *Festuca duriuscula*, Hard Fescue, all of which were infected with Ergot, as well as with mildew. We quite incline to the opinion given by our correspondent; for an excess of these fungoid parasites, eaten by the cows with their pasture grasses, would have a tendency to produce abortions, and ultimately barrenness. We shall be very glad to receive information on this subject; and we will only add, that instances are recorded that where poultry were fed with Rice affected with Ergot the hens laid shell-less eggs.

To enable our readers to identify the Ergot, we will state that it is a small, pyramidal horn, projecting from the upper end of the seed of the grass, in colour blueish black, or very dark violet, with a few dots of grey. Its spores, or seeds, are white, and if sprinkled on the soil, about the roots of unaffected grasses, will induce the disease in them; at least, this is stated as a fact by M. Wiggers. The botanical name of this fungus is *Sclerotium clavus*. It is especially found in Rye, and on this grain more frequently in some soils and seasons than in others. A poor soil, and a close, moist locality, are said to be favourable to its occurrence; but, according to Wildenow, it may be induced at any time, by sowing in a rich, damp soil, and watering the plants freely in warm weather.

We repeat, that we shall be much obliged by information relative to this very important subject.—[EDS. C. G.]

OUR LETTER BOX.

CANARIES (W. F., and A Subscriber, Boston).—If you refer to a list of the exhibitors at the recent Crystal Palace Show, you will see the names of many who can supply your wants.

SILVER-SPANGLED HAMBURGS (Amicus Galli).—You will find the points detailed at page 109 of the present volume.

HEN-TAILED PENCILLED HAMBURGS (W. Houston).—No good Judge awards prizes to these.

INJURED WATTLE (A Subscriber).—So small a bit (half the size of a threepenny piece), being pecked off, is not material.

EAST INDIAN DUCKS.—DOCTORING A CANARY.—“What is considered a fair weight for Black East Indian Ducks? Mine are as large as common Ducks, and I expected to find them much smaller. Does the pure breed often show white feathers?”

[They ought to be totally black, and the smaller the better. 5 lbs for the drake and 4 lbs for the duck is heavy.]

“C. E. K. cannot give a better thing to a sick canary than a bit of *fat bacon*. Stick a few poppy seeds in the bacon, and the birds will soon take to it. I state this from many years experience, and never give any green-stuff larger than a sixpence, and on alternate days.

“Many warnings have been given to sellers. I will give you some of my experience as a buyer:—

“Pen of East Indian Ducks.—One spotted.

“Pair of Barbary Doves.—Two hens.

“Pair of Cochin pullets.—One pullet and one old hen.”—WHEN CONVENIENT.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	DECEMBER 7-13, 1858.	WEATHER NEAR LONDON IN 1857.					Sun. Rises.	Sun. Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.							
7	TU	Chrysanthemums.	30.479-30.348	45-30	S.W.	—	54 af 7	50 af 3	59 af 4	2	8 20	341	
8	W	Correa speciosa.	30.633-30.548	47-35	S.	—	55 7	49 3	6 6	3	7 54	342	
9	TH	Correa pulchella.	30.399-30.266	50-42	S.W.	—	56 7	49 3	20 7	4	7 27	343	
10	F	Coronilla glauca.	30.371-30.317	54-32	S.	—	57 7	49 3	32 8	5	7 0	344	
11	S	Cytisus.	30.548-30.470	49-27	S.W.	—	58 7	49 3	44 9	6	6 32	345	
12	SUN	3 SUNDAY IN ADVENT.	30.637-30.601	50-39	S.W.	—	59 7	49 3	58 10	7	6 4	346	
13	M	Genistas.	30.595-30.429	43-37	S.W.	—	viii.	49 3	morn.	©	5 36	347	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 45.6° and 34.4°, respectively. The greatest heat, 62°, occurred on the 15th, in 1841; and the lowest cold, 7°, on the 16th, in 1853. During the period 105 days were fine, and on 91 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

AFTER the unusually severe frost that we have lately had, it will be particularly necessary to go over the plantations of *Cabbages*, *Broccoli*, *Celery*, and all other such vegetables, and to remove the dead leaves; as, after such a frost, they materially injure the plants, by causing them to rot. Continue trenching all vacant ground.

CAULIFLOWER and LETTUCE.—To grow them stout and stocky in frames, they will require all the air possible, and to be only protected from sharp frosts and heavy falls of rain. If any are growing under a south wall, they will be benefited by a few Spruce Fir branches, or some other such material, being laid over them, to ward off severe frost, and if slightly frozen, to prevent them from being suddenly thawed by the sun,—as the action and reaction of frosts and thaws are most destructive to plants.

HERBS.—A supply of *Tarragon*, *Mint*, *Parsley*, *Chervil*, &c., may be kept up by potting the roots, and placing them in a gentle heat.

PEAS and BEANS.—Sow, if not done last week. Draw earth to the former sowings, when they appear above the surface.

ONION.—*The Potatoe* is a most productive crop. The small offsets should be planted in four-feet wide beds,—four shallow drills to be drawn, ten inches apart, on the beds. The bulbs should be placed upright, and slightly pressed into the soil, and merely covered with leaf mould, or any other light compost. To be earthed-up on a fine day, when the shoots appear above ground. They will be fit to take up about the end of June, and will be useful as a succession to the August sown crop.

POTATOES.—If stored in a dry place, protected from frost, they will require to be looked over occasionally, and any diseased or mouldy ones removed. If pitted, to be examined; and if they exhibit no symptoms of disease, or fermentation, they may be finally earthed over, and secured from severe frosts.

RHUBARB and SEA-KALE (if not forced by the application of dung and leaves in the open ground) plant in pots, or boxes. They should be placed in any corner where there are heat and darkness at command.

FLOWER GARDEN.

Where alterations and planting are in hand, they should be carried on with expedition, while the weather, after the late severe frost, is again favourable for the purpose. Shrubs, plants, &c., may still have a spell of mild weather, to make fresh roots before the severity of winter sets in. Mulching is recommended as a protection to everything planted now.

AURICULAS.—Give abundance of air, and protection from falls of rain, or snow; as they will bear, when in a healthy condition, many degrees of frost without injury.

BULBOUS ROOTS.—Plant such as *Crocuses*, *Hyacinths*, *Jonquils*, &c., without further delay, in mild, dry weather, in beds or borders, of sandy, or light, naturally dry soil.

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CARNATIONS and PICOTEES.—If the spot, or mildew, appears, cut away the diseased portions of the foliage, and place the plants on wood, under glass, in an elevated position, with a free current of air in mild weather. Prepare the compost-heap for next season, by carefully turning it occasionally for the next three months: during each operation it should be closely examined, to detect the florist's plague, the wireworm.

HEARTSEASE and PINKS.—Look over the beds, as, after the late frost and thaw, they are apt to get loose in the soil, and will require careful attention to fix them in their proper places.

HERBACEOUS PLANTS.—The hardiest kinds may be planted in open weather.

RANUNCULUSES.—The roots to be looked over occasionally, kept thoroughly dry, and the mouldy ones, if any, picked out. The soil in the beds intended for them will be improved by being turned over in frosty weather, and then left to settle, or consolidate,—as they do best in beds of a close texture,—leaving five or six inches of the surface in ridges, to be raked level when planting them in February.

ROSES.—Plant in mild, open weather. They thrive best in strong, stiff, rich soil. The ground to be trenched two feet deep, and well drained. The following compost is recommended, where the soil of the garden is not naturally suitable for their growth:—One-third loam, one-third vegetable mould, and one-third half-decomposed horsedung; to be well mixed together before using. When planted, the Roses to be staked, to prevent the wind from loosening them at the neck, and to be mulched with rotten manure, to protect the roots from injury by frost. The *Cabbage* and *Provence* may be pruned, if the weather continues mild; but *Chinese*, *Hybrid Perpetuals*, and other tender kinds, should be left till the spring. Get in a stock of *Wild Briars*, for budding upon next season.

WILLIAM KEANE.

BRINGING UP ARREARS.

If what everyone says must be true, I shall never be able to finish the system of portable greenhouses to the satisfaction of my next-door neighbours, unless Mr. Fish will have a finger in the pie; for they all say he is the man for that kind of thing. But it is merely on purpose to be on good terms with my neighbours, that I mention him thus, as I had the good luck of seeing him in St. James's Hall, when he promised that he would send in his contribution before I should have time to sum up. Anybody, and every person, high or low, rich or poor, may yet have a solid share in this business, without risking any responsibilities. But I must close up my own shop before the end of the old year. I have so many things belonging to this year on my conscience, that I could not relish Christmas fare, unless I relieved my budget.

The cutting cold wind of the fruit-show week, and the intense frost which succeeded, kept me from seeing the new Pompones and Chrysanthemums at Mr. Salter's, at

the usual time; but those who look for such things will not be disappointed.

Another subject—after which I had taken a wide circuit in the long vacation—is out-door Grapes. Neither Pomological nor Pomona seem to care much about Grapes from the open air, and yet I am bound to assert there are some hundreds who would most willingly join in pushing Grapes as far up the south walls as they could reach. I gained a most curious insight into the subject. I found out-of-door Grapes, this autumn, with bunches weighing from one to three pounds, and far better-looking Grapes than some of those which took prizes in St. James's Hall. I also found that every plant which produced such bunches were, invariably, pruned quite contrary, and in direct opposition, to the best practice of us gardeners; and I was flatly, and without flattery, told by some of the owners of these Grapes, that gardener's pruning would never produce, and never could produce, a bunch of Grapes in this country much over 1 lb. in weight. I believe it, too, for I pruned my own out-door Vines, as good and as earnestly as any gardener ever did in this world, and yet my bunches were not heavier than that; but my crop, for evenness, looked more like hothouse Grapes.

The best out-door Grapes, and the best crop I have met with, after them, was produced on Vines which have been pruned on Hoare's system from the beginning. They were on the north side of the city of London, as you go to Mr. Cutbush's nursery, at Highgate, and belonged to J. Jefferson, Esq., of Carlton Villas, Holloway. Mr. Jefferson does all the pruning himself, and he understands Hoare much better than some of us first-class gardeners. He has ripened, this season, as many kinds of Grapes as Hoare mentions in his treatise, but not just the same kinds. I sent him buds of my black Grape, which puzzled the best gardeners in Willis's Rooms last year, and for which seven distinct and different names were assiduously on the spot, and he sent me a jar of most beautiful-looking and delicious jelly, which Mrs. Jefferson makes from the thinnings of the Grapes.

But about the tremendous large bunches of Grapes. They were produced from nursery stools, which stood in good vineyard soil, since the comet of 1811. No need, therefore, to tell me, and "the likes o' me," that age will stint the weight of bunches on good dry soil, with a sound bottom. These stools were not used for many years, to get layers from, in the old style of slow-and-sure propagation, but were cut back to the last eye or two, to get the longest possible shoots, to be cut into single eyes, in February or March, to make sale Vines. Now, a good stool would, or did throw up, from seven to eleven shoots, as I counted them, and each shoot had one bunch close to the ground at the start. Some shoots had three bunches; but the big bunches, which astonished me, stood singly, and the spurs, as one may say, before these bunches were from ten feet to sixteen feet long. Therefore, that was neither the spurring nor the long-rod system: it was the stool system. Now, I could make a fool system out of one of these stools, and tools of the Pomologicals; and I would make my lord's gardener look very foolish before the Society, by producing out-of-door Grapes better than he could from the hothouses, and from Vines four times the age of his Vines, and forty times closer pruned every year, than any lord's Grapes in Christendom. That is what I would call the fool system. But lest others would do as I could, I would advise the Pomological Judges, and the Committee, to put their heads together, and decide *on*, or *in* the schedule, that out-door Grapes be exhibited with all the spur above the bunch untouched, be it one joint, or three joints, or forty joints before the fruit. On this rule being complied with, the big bunches I mention would have, on the average, twelve feet of spur, and that, of course, would disqualify them by another clause in the schedule.

After the practice was in full motion,—that is, after

out-door Grapes came to be looked for at shows, as regularly as *Hamburgs*,—I would confine the best prizes to the Grapes which were grown on Hoare's system of pruning and training, and I would have them shown quite different to anything that has been done yet. I would come out as strong as Mr. Errington did last week, with his most able and most practical article on orchard-houses, in every syllable of which I perfectly and most conscientiously agree with him. Yes, I would come out, just like his Camellia compost, with the small dust, and close, dry clay of science sifted out of it, and none but the two-inch lumps of practical knowledge, and the bare geological compounded in my compost. You must not only show me how you had grown those Grapes, but also how you pruned the trees, how many bunches you left to one spur, and how many bunches you could profitably get from a last year's shoot. Then people would learn the value of what they paid for admission to that show, and the big stool and fool systems would have no chance, but with people who have no practical knowledge to guide them in giving their awards.

I once asked a clever exhibitor of Grapes in Regent Street,—“How came you to let Mr. Merryman beat you to-day with his *Hamburgs*? ” “Oh! ” said he, “Mr. Merryman's Vines are only seven years old from the planting, and mine are fifteen years old, and that makes all the difference.” Now, on Hoare's system, the odds should be in favour of the older Vines. Indeed, on that system, Vines seldom come of age at seven years from planting; because after planting, no matter how strong the young Vines were, the plants ought to be cut down to the last bud, next the soil, for the first two years, and, with ordinary plants, the third year also. To be sure, that is different from the way Hoare himself advises; but the same conclusion is thus arrived at by more scientific and practical means, than he sets forth in a given diameter of stem, or trunk, to a certain weight of crop. The four hardy Vines which Mr. Rivers very kindly presented to me last spring, I cut down to the last eye when I planted them, and this month I cut them a second time quite as low. My rule with them—that is, unassisted out-door Grapes, or Vines—is the same as that for all kinds of climbers whatever,—not to allow a single shoot to remain for permanency, until the roots are sufficiently strong to throw up a shoot as strong as any old-established plant of the same kind could possibly do. Thus I save time, to begin with, and the bother and vexation of working from inferior and hide-bound wood.

I believe Dr. Lindley will turn a convert to out-door Grapes after all; and, if so, we shall certainly get rid of the stumbling caused by the Horticultural Society since 1830, when he took up the reins. He speaks most favourably of *Black Hamburgs*, which ripened perfectly in Yorkshire, this season, on a flued wall, without being told if the flue was really used; and *Black Hamburgs*, from the neighbourhood of Glasgow, are on record as having ripened perfectly, many years running. I have seen these *Hamburgs* perfectly ripe in the garden of the Infirmary, at Inverness, at Forres and Gordon Castle, in the next county, to the eastward. But these Scotch *Hamburgs*, and the Yorkshire ones, I believe to be the *Esperione*, which no man on earth can distinguish from each other, but by the difference in hardihood. But we had seen quite plain, this time last year, that two distinct kinds are grown and sold for the *Esperione*; and, of course, one of them can only be true, and that true one is, probably, grown extensively under the name of *Black Hamburg*.

I have often spoken of having grown thousands of bunches of the true *Esperione*, which ripened and coloured as well as a *Hamburg* ever did, from a south wall, which was flued, but the flue never used. No one could distinguish them from hothouse Grapes; indeed, for many years, they were the principal Grapes in the desert at Eastnor Castle, where some of the best

families in the kingdom partook of them, without ever knowing they were not Earl Somer's best hothouse Grapes. Therefore, it is sheer nonsense on the part of Dr. Lindley, to pretend that there is any novelty in ripening black Grapes in the south of England without more aid than that afforded by a south wall. I argued the subject of growing out-door Grapes, with Dr. Lindley, this time last year, in Willis's Rooms, and all I could get out of him was, that some forty years back he had seen a crop of them in Norfolk, but that there was no use to try them in times like the present, for no one would eat them. Being a great advocate for out-door Grapes myself, I cannot but be well pleased with the Doctor's change of opinion on the subject. But I much regret that he should place the matter in that kind of light called novelty, by which he is sure to raise a host of prejudice against the system, in the minds of practical men, whose aid would be most valuable in setting the system in smooth motion. These are two subjects belonging to this year which are now clearly off my conscience.

The third subject is a most useful, and a perfectly novel thing in the family. It is a little new kind of Rhododendron, which I mentioned as having seen in St James's Hall last spring. It was in a collection which was exhibited by Messrs. Hugh Low and Co., of the Clapton Nursery, and called *Rhododendron virgatum*. Of course, I inquired after it the other day, when I was at that nursery, and found it just as I expected,—in large numbers and selling cheap. It is quite hardy, blooms much like *ciliatum*, with a much smaller growth, and blooming, or in blossom-bud, exactly like an *Epaeris*. The young shoots of this season are studded with bloom-buds, from top to bottom, at every joint,—a way in which no other Rhododendron, with which I am acquainted, blooms. The reason why I did not mention it in the report of the nursery was, in order to have more space, that I might point it out more especially to the attention of cross-breeders. But it is as good, and useful, and as early, as *ciliaris* with other folks. Now, can the cross-breeder get this *Rhododendron virgatum* habit into seedlings, for a new section, or new, race of dwarf plants, to come in for forcing from February onwards? If so, there is not a plant in England, at this moment, from which more really useful crosses could be looked for. The seedlings would be everybody's plants, being dwarf and hardy. But I have little experience in crossing the best kinds of Rhododendrons; and since the late Dr. Herbert wrote upon that subject, twenty-two years back, we have not had much light thrown on it, to guide the young and ardent from a scientific point of view. What is done and said on a haphazard venture is but too often a crossbar against the cross-breeder, who, if he wants to arrive at facts, has to spend his time to prove things for himself. But my conscience is clear on that, as on this subject; and let us try subject the fourth; but it is too long, the fifth must come in before it.

Farfugium grande, the grand, variegated, great Coltsfoot of Japan. This I mentioned as coming from cuttings of the leaves with the footstalk, just like Geranium leaves. That was on the authority of a London nurseryman, to whom I shall now look for the first plant of it for the Experimental garden, by way of paying me for "eating my own words," or rather for being driven, by this conscience, to eat his words. I was told at Clapton, that the footstalks of *Farfugium* root sure and fast enough, but not in the sense I wrote about. Although they root freely, they do not send up a shoot, leaf, or bud—at least, the first season. But the plant increases so sure and fast from running pieces of the roots, that *Farfugium grande* may soon be had, in Covent Garden, as cheap as I said, after all. They have large patches of it, out-of-doors, round a pond, on rockwork, at Messrs. Low's, and the plant looks nearly as well as it has been seen at the shows. It was also in bloom at the September Crystal

Palace show, and not much different from the yellow of our own Coltsfoot, only a little taller in the flower-stem.

The last subject to-day will be the new and very dwarf *Zelinda* bedding Dahlia, *Coccinella*. This, also, was mentioned in the summer, as a very promising subject, which was received at the Experimental on St. Swithin's day. This plant did not flower; but the whole top of a flowering-plant was sent to me after the first frost in October. It was full of blooms and bloom-buds, and was packed in a box eighteen inches long, nine inches wide, and about the same in depth. A ball of wet moss was round the cut end, and the rest was free. In this way it came from a midland county, through London, as fresh as when cut. I put the moss in a 48-pot, and potted the whole thing in the moss; and thus I kept it alive, and in bloom, among my Geraniums, just one month, and I verily believe I could have caused it to root, if I had thought of that in time. The flowers are of an orange scarlet, and the plant is the dwarfest of all the Dahlias I have yet seen. The habit also seems very good for bedding. Now, or rather in after years, when it will be a regular fashion to cut down dwarf Dahlias on the evening of the first frost, and to plant their blooming heads in damp moss, in pots, to prolong their season another month,—old gardeners, who may be sucking their thumbs just now, will hear of the plan as being hit upon first with *Coccinella*, by some writer on gardening, whose name has been lost long ago; but all that he said about *Coccinella* must have been right, for there it is to this day, and so is

D. BEATON.

FRUITS AND FRUIT ROOMS.

NOTWITHSTANDING all that has been written and urged about fruit rooms, the world is anything but unanimous as to the conditions requisite. Some years since, there was a great pucker about ice-houses; and, whatever the character, or value, of the knowledge extant, concerning them may be, the ice-house men certainly reduced the question to a narrower and more satisfactory basis. Now, we may inquire into the conditions requisite in preserving fruit; and, in order to make the subject tangible, I must assume that our inquiry is, as to the best mode of keeping choice Apples and Pears through a long winter and a tardy spring. I urge this view of the question, believing, that whatever conditions are proved to be necessary for this one object will carry out every collateral point with regard to other fruits. I have a fruit room here, which I think possesses every requisite for keeping, and I may as well give its history.

It is about forty feet long, by twelve feet broad. Twenty-nine years since, this was an old back shed, the timbers overhead so low, that, unless you bowed like a genuine Frenchman on entering, the penalty was likely to be a broken pate. About that period, there arose perhaps the first public discussion about fruit rooms; and this, as our knowing moderns say, began to ventilate the subject. Some advocated keeping fruit upstairs, some down; others would have a cool cellar. Amongst the rest, that facetious and waggish fellow, who called himself Agronomist, settled the matter by one stroke of his pen, affirming that what was the best place to keep ale was sure to be best for Apples.

But funny as Agronomist was, his bold jokes could not pass for sound logic with persons of education. They stood merely as bold affirmations, however right they might prove. But, say they, the great fault of upstairs work is, that the Apples shrivel prematurely; and, indeed, they do. If we go downstairs, the place is so cold that the Pears do not ripen: some of the late kinds become, as it were, petrifactions. As for blettting, as it is called, or that chemical or other change by which the flesh of the Pear becomes like a Medlar, they seldom,

as far as I know, assume that condition in a very low temperature.

I think that there can scarcely be a better room than mine for general purposes. But some of the latest Pears never become thoroughly melting, especially such as the *Beurré Rance* and *Ne Plus Meuris*. I think it is proved beyond dispute, that some kinds of Pears will not ripen as they ought to do in a very low temperature. They may thus be kept a longer time than usual, by being excluded from the air, in jars, &c. But, although they may astonish by their fresh appearance, on the exhibition table, they will seldom gratify the palate. Now we find, that most of our autumn Pears which ripen out of doors, or nearly so, are generally satisfactory. Look at the *Marie Louise*, which is generally all but ripe when gathered; and under what temperature has it existed during the end of September and early part of October? Why, an average of about 60°. Under such conditions it has become so far changed in character, that a fortnight in a dry room, and it is fit for table,—changed from a dull green into a rich golden yellow. But the *Beurré Rance*, in a cold fruit-room, lies for months in a temperature of some 35° to 40°.

This old shed, then, had to be made into a fruit room; and I had made up my mind, after watching the course of events, to lower the floor, and to go down three steps, or twenty-one inches, into the room. I accordingly had the floor lowered that much, and, from being a Mushroom-shed, it soon became a capital fruit room, which it still remains. By the bye, I have seen the finest crop of Mushrooms in that shed I ever saw in my life, and that in the months of January and February.

I had one foot in depth of clay puddled carefully down before paving, in order to prevent the too rapid ascent of underground damps; and it has had the effect I intended. And why should not a *Beurré Rance* enjoy as warm an air as a *Marie Louise*, when undergoing the change which commences the ripening process? I do not mean to affirm, that all Pears of necessity demand exactly similar conditions; but this I will urge, that, beyond all doubt, there is a critical period in all fruits, when a change, chemical or otherwise, commences in the juices, and that this change demands special conditions. If the conditions under which they are placed are adverse to such change,—to say nothing about facilitating it,—I am persuaded that the course of nature becomes perverted, and disappointment in flavour and texture is the consequence.

I find Pears to keep well on shelves with close lids to them, and, of course, in drawers which fit close also. If I were going to build fruit rooms for myself, I would have one just under the conditions that I before described,—a cool one; and a second smaller, with a hot-water pipe all round the exterior. Each should have a separate stand for Pears, in drawers; but the one in the warm room should be, in part, a skeleton stand, to receive on any occasion any one, two, or more, of the drawers from the cold room, and which should, of course, be made to fit either place. The Pears, being carefully placed, when gathered, in the drawers in the cold room, in samples, and quantities adapted to the demand likely to occur, might be removed without any handling at any time. Our readers, no doubt, know, that handling much is fatal to many of our finer-skinned Pears, after they begin to turn for ripening.

There can be no doubt, that a deprivation of light, at least partial, is of importance to the long keeping of fruits; but the exclusion of air is of more importance still, or else why do fruits keep so long packed in jars, &c.? Apples, too, have been known to keep a long time pitted as Potatoes, but I beg again to repeat my conviction, that in proportion as we take such extra means to prolong these composts of the dessert table, so, in like proportion, we war against both flavour and texture; at least, such has most frequently been the result, and such is, I believe, a very common impression. We all

know that many Apples, as also some Pears, are liable to a rusty kind of fungus on the skin, which produces a similar effect on them to the rust on iron, eating stealthily its way in, and greatly injuring the fruit. I have long proved, to my satisfaction, that two conditions conjointly are averse to the production, or spread, of this fungus—viz., dryness and darkness. Now, I do hold, that in proportion as a cool fruit room is low in temperature, so in proportion should it be dry, and this is a condition not very easily obtained. We have heard of fruit rooms cut out of the solid rock, and that the interior, whilst cool, was dry enough for a parlour; but not everyone can avail himself of such a condition. The carefully puddled clay is the safest plan where bottoms are damp and porous; and if the flooring could be placed over this without contact, the bottom would be equal, in my opinion, to the rock. But then there are the sides and roof of the building: these have more to do with the question of heat than of moisture. Double walls, with a cavity of a few inches, are, doubtless, the best for the sides; and, as to roof, if no story above the fruit room, why give me a thick coating of thatch, old fashioned as it is. The great business is, that the temperature be pretty even: great fluctuations are averse to long keeping in fruits. Then, with a foot deep of close clay beneath,—a very inert body as compared with lighter materials; double walls at the sides, well known as non-conductors; and a thatched roof, as great a non-conductor; and the base, or floor, of the room about half a yard below the ordinary outside level, with every provision for warding off, or collecting, rains, snows, and their consequences,—we have, I think, all the chief essentials for long keeping. One thing I forgot to name in its place, the propriety of having double shutters to the windows. This is particularly necessary in severe winter weather. I consider that, from November to March, a temperature of about 40°, as near as possible, would be most desirable for the cool room: freezing should be out of the question.

But we may now come to the question of how Apples, Pears, &c., should be managed from the time they enter the room. Young beginners may fairly be puzzled at the advice sometimes offered, of giving lots of air to the fruit room for some time after gathering, and of keeping them from the air after a given period. Now, in all this, there must, of necessity, be a transition state; and the question for a novice would be, where does the ventilation question end. It is a well-known fact, that all fruits and all roots sweat much when they are first housed, and that this sweating is prejudicial to the skin of the fruits if confined. In former days, it was thought the best of practice to pile the fruit in heaps, to make them sweat, and after a few weeks to wipe them all, and there could scarcely be a worse practice. Indeed, as to keeping fruits, the main thing is, to prevent them sweating as much as possible. But they will do so, more or less, and this sweating decreases progressively until about the end of November, when it becomes no longer a consideration.

During this sweating period we are obliged to ventilate, in order to disperse damps, and to prevent the aroma from various fruits corrupting, which it would do if long confined. But, as the sweating decreases we gradually decrease the ventilation; and by the middle, or end, of November, we are in a position to dispense with it, unless on special occasions, to dispel damp. If much ventilation be allowed after this period, the sure consequence will be a premature shrivelling of the Apples.

I need scarcely urge, that cleanliness is almost as necessary in a fruit room as in a dairy. The shelves should be looked over once a-week, and all decaying fruit removed. In storing fruit in the autumn, it is unwise policy to place the whole gathering of any fruit together. There are always some small, inferior, or specky, fruit, which are of little value, and which are, generally, the likeliest to breed corruption; these are, by far, best by themselves. Besides, they derogate

from the general appearance of the room. Some kinds of Apples are very apt to engender a fungus on their skins whilst growing on the tree: I may quote *Hicks' Fancy* and *Pitmaston Nonpareil*. I find it the best plan to gather these a little unripe, as the fungus seems to revel on the ripening skin.

R. ERRINGTON.

MOUNT EDGECOMBE.

THIS is, perhaps, the best-known place in the kingdom. Not that more persons have actually seen it, than other princely residences of our gentry and nobility, but that—owing to its beautiful marine peninsular position, its sublime and very diversified scenery, enhanced not merely by its proximity, but its contrast to, a great naval port, and, perhaps, the greatest national workshop—it has justly become such a favourite subject with the painter and the engraver, as to be found gracing the windows of the printsellers in almost every town. Hence, when, from Plymouth Hoe, I first caught a sight of the beautiful place, I required no one to tell me that it was Mount Edgecombe. From the Hoe, as stated above; from Millbrook bay, or lake, near the Hoe; and also near the termination of the railway;—from the neighbouring connected towns of Stonehouse and Devonport, the virtualing yards, the splendid docks and workshops, and the fine park lately obtained by the people of Devonport, all clustered on the east side of the bay, or Sound, of Plymouth,—fine views are obtained of Mount Edgecombe, nestled in a peninsula on the western side of the Sound. The ground, which rises rather precipitously on the eastern and southern sides, shelves down very gradually to Cremill, near to which, and close to the water, are the principal ornamental gardens, a gradual ascent leading to the house at something like half a mile distant. There is a regular ferry from Admiral's Hard, at Stonehouse, and Mutton Cove, at Devonport, and Plymouth Hoe, to Cremill. But a boat can easily be obtained from any other place connected with any of these towns, for a mere trifle more, in proportion to the distance. Parties not exceeding six in number can have cards of admission, and a guide to accompany them, any day, by applying to Mrs. Huss, stationer, Chapel Street, Stonehouse. On every Monday during summer, the place, with the exception, perhaps, of some private grounds, is open to the public, without let or hindrance, and thousands generally are not slow to enjoy the boon thus freely offered by the noble-hearted proprietor.

I regret much that time did not admit of going over the whole of the beautiful grounds, and observing all the magnificent views of land and water, from the elevated park terraces; but were I to describe all we did see, I should want numbers, instead of columns. A friend put the question,—What might be its leading feature, in contrast with such places as Mamhead and Chatsworth? And, perhaps, even from such a question some idea may be formed. Mamhead, like Mount Edgecombe, seemed embowered in wood; but it is fully six times farther from the water, and has it chiefly only in front. The country between it and the water is cultivated, whoever it may belong to, and the rising ground behind it is also cultivated, and may belong to different proprietors. The wooded appearance, when seen from a distance, depended chiefly, so far as I recollect, on strips of wood and hedgerow timber. There can be no mistake as to Mount Edgecombe being one demesne, even when seen from a distance; and a striking peculiarity is, that the highest grounds, even to the top of the hill, are open, even for park scenery; and it is from these heights that the most splendid views are obtained. Here, then, would be the great contrast to Chatsworth; though it is out of the way to contrast or compare, where all is thoroughly dissimilar. Notwithstanding the fine position of the Palace of the Peak, the artistic character of its

flower gardens, water cascades, and fountains, the beautiful winding Derwent in the hollow beneath it, the fine diversified park, with its noble timber, and, so far as I have seen, its thoroughly unrivalled park village of Essendon,—there can be little question that what adds a magic charm to the whole, is the background,—the romantic steep hill, clothed with Scotch Fir and other sombre tints, enlivened with sparkling gleams of water, as it dances from crag to crag. Here, at one view, are presented the romantic picturesque, the highly-finished architecture, the artistic, and the gardenesque in gardening, with the more common elegant accessories of park scenery.

At Mount Edgecombe, on the other hand,—with the striking exception of the precipitous cliffs at places such as those on the south coast, beyond Barnpool, and which are clothed and surmounted with evergreen Oaks, Laurels, Arbutus, Myrtles, and other evergreens,—there is but little of the romantic in its general composition; but the prevailing features are an exceedingly rich, varied, picturesqueness, combined with the freedom of open campaign park scenery. That clothed picturesqueness is effected by combining all modes of planting in one whole,—such as a wide avenue of grass, with double rows of trees on each side, from the lodge at Cremill up to the house; other avenues, between the shrubberies of the house and the south coast, relieved of their sameness, however, by large open spaces and large groups of trees; by a large open space between the coast and the shrubberies, called the amphitheatre, where tier above tier of fine and rare trees rise above each other on the slope of the hill; while behind these, and passing behind the house, in a very irregularly curved line, a dense mass of plantation extends pretty well across the peninsula, that wood, like all other parts, being traversed by walks revealing many points of interest. Beyond this, higher up the hill, or mount, which, though pretty high, has none of the abrupt steepness of Chatsworth, is placed the open park scenery, relieved only by few and small groups of trees.

What, therefore, may be more properly denominated open park, is chiefly found behind the house, on the highest rising ground. No doubt, it is of importance that the ground there should be much more thinly planted, in order to permit the eye to wander freely over the striking scenery on each side. Yet, when looked at from the other side of the bay, this more—nay, very open part, seemed too great a contrast to the more densely wooded part below it. A large terrace-walk goes across this open part, about the centre, whilst a circuitous walk traverses its lower and upper extremities; from all of which, but especially from the upper and middle one, the most varied and extensive views are obtained;—on the one side, the sea, with the noble breakwater at the entrance of the bay, or sound; before you, the towns of Plymouth, Stonehouse, and Devonport, with the hills of Dartmouth, &c., beyond; and thronged in the noble bay, the huge Leviathans, that constitute the wooden walls of old England; whilst the many more that are building in the docks, with every new improvement, might permit our alarmists to sleep without the nightmare dream, that England would become the easy prey of the first continental power that had the wisdom to attack her. On the other side, the bay would be seen gliding into the estuary of the romantic Tamar, whose banks, we were told, would rival, for picturesque and striking beauty, even those of the Rhine; and across which, at Saltash, is now nearly completed, the beautiful tubular suspension bridge, for the Cornwall railway, pronounced, by many competent to form an opinion, to be the most striking result of scientific and engineering skill the world has hitherto witnessed.

However, leaving everything else out of view, I would now content myself with noticing a few striking plants in the gardens near the entrance-lodge, at Cremill, and also

in the neighbourhood of the mansion. These gardens occupy a jutting-out corner opposite the Devil's-point battery at the victualling yards; and, though nominally passing under the name of the Italian, the French, and the English garden, most of the distinctive features they may have once possessed are now lost, by the encroachments of the surrounding trees, and, perhaps, by their peculiarities not being kept distinct.

We were fortunate in meeting at the entrance with the worthy gardener, Mr. Polly, who has had the management here for about half a century, and in whom the fire of enthusiasm for his craft burns as brightly as it did in his younger days. We came first to what is called the Italian garden, of a circular form, with a fountain in the centre, and flower-beds round it, set off with lines and avenues of large Orange plants, in tubs; backed with a spacious conservatory, 100 feet in length, into which the Orange trees are removed in winter; and fronted with a terrace, ornamented with various statues, having a Bacchus at one end, a Venus at the other, and an Apollo in the centre. Close to this is the French garden, backed by a range of houses, for growing serviceable plants, layed out in *parterres*, and graced with festoons, bowers, and trelliswork. Beyond this is what is called the English garden, consisting chiefly of lawn, shrubbery, and borders. But most of these gardens were suffering from confinement. There were also shrubberies, as well as a flower garden, close to the house, the latter planted partly on the grouping, and partly on the old mixed system, and all, but especially the three former, decorated profusely with urns, vases, and statues. The house is an elegant structure, in the castellated Tudor style, placed on a raised platform, the ground falling regularly to the beach.

I do not guarantee the exact size of the specimens mentioned, but I believe it will be found that there is a close approximation. One side of the house is nearly covered with Myrtles, that are a mass of bloom every season. The plants are pruned close in, on the spurring system, in April, and during the summer the young flowering shoots are produced in a dense mass all over the space:—One *Magnolia grandiflora* tree, more than thirty feet in height, and more than 100 years old, from which young trees had been raised that were beating their progenitor. Orange trees, fourteen feet and more in height, with stems more than a foot in diameter. Several Cork trees, fully equal in height to those at Mamhead; but none, so far as I judged, so large in diameter or circumference of stem. Fine spreading evergreen Oaks, 100 feet in height. A huge *Cupressus Bermudiana*, about twenty feet in circumference at three feet from the ground. *Photinia serrulata*, twenty feet in height by twenty-four feet in diameter of branches. Magnolias, of sorts, very fine. *Pittosporum Tobira*, some eight feet in height, and twelve feet in diameter. Pomegranates, large and healthy. SweetBays, forty feet in height, and thirty feet in diameter of head. Chinese Privets, from sixteen to twenty feet in diameter, and wide in proportion. *Erica arborea alba*, ten feet in height, and as much across. Arbutus, thirty to forty feet in height, and large circumference of head. Portugal Laurels, from thirty to forty feet in height, with clean stems from seven feet to ten feet, and circumference of stem from seven feet. *Chimonanthus fragrans*, about fourteen feet in height, and more in diameter of head. *Calycanthus precox*, fifteen feet in height, and fully twenty-one feet in circumference of head. Indian Bamboos, more than twenty feet in height, and growing freely and gracefully. Camellias and Myrtles of great size. Hydrangeas, ranging from six to nine feet in height, and more than double in diameter of head. We noticed one perfectly beautiful Hydrangea, on an open lawn, from seven feet to eight feet in height, and nearly double that in diameter at the base, rounded off to a blunt cone in the centre, and the whole plant, from the ground to the summit, being one dense mass of deep blue flowers. On the afternoon previous, we admired the ladies and their

dresses, on the Hoe, the great promenade of Plymouth,—for the time being, blue in its various shades was the fashionable colour for dresses. Our friend, generally gallant, was actually rude enough to say, that for all the elegance of the ladies, and expand themselves as they might with crinoline and steel bars, they would yet be far, as respects their dresses, from equalling that gorgeous Hydrangea. These Hydrangeas were blooming with many shades of colour, from pale pink to deep blue, and many had pink and blue blossoms on the same plant. Mr. Polly told us, that the colour there was greatly influenced by the application, or the non-application, of a rich leaf-mould dressing to the roots, and that so generally was this the case, that, according to the treatment, one side of a large plant would produce blue, and the other side pink flowers.

I would now allude to a few matters, in the way of conclusion.

1. *Plants for the seashore.*—Mr. Polly finds that none are superior to the *Quercus ilex* and the *Pinus pinaster*. As this is a matter of growing importance, it would be well if Mr. Polly would give a full detail of his very lengthened experience. It transpired, that on this subject Prince Albert is as anxious as any enthusiast among us. There is the budding of a tendency to imagine that old gardeners are not quite up to the mark in these wondrous railway times. It was very pleasing to find, as Mr. Polly said, that when the Prince visited Mount Edgecombe, he was among the first persons he inquired for; and that plants and trees suited to a marine residence, and the mode in which visitors conducted themselves, when admitted freely into such a demesne, always constituted principal topics of inquiry and conversation. We could gather that, in such circumstances, the Prince was quite favourable to visitors having access to refreshments, provided they were of an innocent, invigorating, and not of a stimulating character.

2. *Securing the comfort of visitors.*—I do not know if upon other days it would be regular for visitors to obtain refreshment, except at the Edgecombe Arms, at the beach; but on the public days (Mondays) there are several places appointed within the demesne,—such as lodges and cottages, where parties can be provided with hot water and the necessary utensils for tea, at the fixed charge of twopence each,—such parties providing themselves with all the necessary supplies of tea, sugar, and eatables. This is not only a great advantage in such a bracing, extensive place, to those not the most vigorous and robust in health, but it offers to families and friends all the charms, with none of the inconveniences, of a gipsyng picnic. Of course, those houses that receive this permission are so far answerable for the good conduct of their temporary visitors. Mr. Polly assured us, that, with hardly a single exception, these multitudes of Monday visitors conducted themselves so well as to leave nothing to be desired.

3. *Treatment of the garden labourers.*—I was grieved to learn, that the noble proprietor of this beautiful place could seldom live at the mansion, owing to bad health, but chiefly resided on the opposite side of the bay. Sometimes long-continued affliction embitters the spirit, and thus scourges our woes into additional poignancy; in other cases, it causes the heart to beat more tenderly for humanity, and enables us to sympathise more thoroughly in the distresses and troubles of others. This practical sympathy, seen and felt by those above him, is the most powerful instrument for reaching the heart of the working man. There can be no mistake as to its development at Mount Edgecombe. So far as I know, there may be a general rate of wages, below which none are paid; but a double encouragement is given to industry and application, in the principle of giving an advance of wages according to proved ability,—an advance which continues in health and in sickness, in youth and in old age. If placed on the superannuation list, and unable

to work at all, or merely able to work part of their time, the pay they received when strong they receive when feeble. Many gentlemen make a retiring allowance to a faithful old servant, but generally at a considerable reduction on their wages. It is felt here, that such a reduction would be a painful reminder to the old or enfeebled workman, as leading him to contrast his present and past condition. Would that such tenderness for the feelings and self-respect of the workers were more common! Few, perhaps, could have it in their power to entirely imitate, in this respect, the noble proprietor of Mount Edgecombe; but it would be easy to exhibit more of that practical sympathy, that would bind in unity of interest the employer and the employed, rendering the one more generous and the other more trustworthy and faithful, without which even our congress meetings of the wise and good, for improving and elevating our condition, will fail to produce their due and legitimate influence. All honour to those who establish such noble precedents and examples, which must be felt as an influence, even when not exactly imitated! R. FISH.

GARDEN WALKS.

It is universally admitted, that no garden is complete without "good walks;" and those who have the good fortune to live in districts where the materials abound, that are necessary to attain this end, have a decided advantage over those who have not. And some places are almost destitute of what another considers essential to the making of a good walk. Gravel is the general substance; but many other things may also be used with advantage; and it very often happens, that substances differing widely from each other have to be blended into a mass to form the pathway. And it is scarcely necessary here to say, that the material most plentiful in the district determines what shall be most generally used. Good gravel is the favourite, where it can be had; but, lacking that, broken or crushed stones, brick rubbish, ashes, or the refuse of factories, where strong fires are used; besides which, there is the crushed stone, or spar, from lead and other mines, and many other things, independent of asphalte, concrete, or tarred walks, which have become so fashionable of late, especially in the neighbourhood of towns,—where a laudable desire to improve the walks and public footpaths has led to the adoption of tarred walks to a great extent. Some in the suburbs of Maidstone are exceedingly well done, and seemingly leave nothing to be wished for, on the score of appearance or utility, only that they might be made cheaper.

Where plenty of good gravel, or its equivalent, in the shape of broken or crushed stone exists, there is no difficulty in making a good walk; but where these things are scarce, and it is imperative to make the greatest possible length of walk with limited materials, there is then some little judgment required, for several contingencies present themselves, not the least being the liability there is for worms making their way to the top. Weeds, also, are troublesome, and their destruction must be thought about at the time the walk is formed. Besides which, other evils of a local nature have often to be guarded against. And it is best to foresee all these things when the walk is forming, for, be it remembered, that, although rolling and sweeping be necessary conditions for keeping a walk nice and tidy, circumstances often prevent their being much attended to. It is, therefore, in such cases, better to form the walk so as to require but little of such after trouble; and also, in those cases where weeds are likely to be troublesome, and poisoning them, or salting the walk, be inexpedient, let the walk be so formed as to allow the weeds to be hoed up, as hand-picking is a tedious and expensive job. Observe, I am giving advice

to those who want to form and keep their walks at the least possible expense.

Assuming, therefore, that a walk has to be formed in a wet, retentive soil, or stiff clay, or in a rainy district, the best way is to scoop out the bottom of the walk into a sort of furrow,—both sides inclining from the edges to the middle,—along which put in a drain of some sort, with a proper outlet, &c., the depth only being a few inches, if material be scarce. Over this bottom, so smooth as to allow the water to run to the drain, put on some of the roughest material at hand,—brickbats, or old ones with lime adhering to them, clinkers, or other refuse, from factory waste-heaps, and, in fact, any thing that comes to hand of that sort. On this bottom strata put on some finer material, and, last of all, the finest. A good rolling, however, ought to be given before the last is put on, and at the last. But, if gravel cannot be had of any kind, nor anything resembling it, a mixture of sand and small broken stones, with a little lime, will often make a hard, good, smooth surface: but it breaks up when disturbed to get the weeds destroyed. It is, therefore, often advisable to increase the quantity of sand, so as to have a little loose material at top; and over this lay on about one inch of white shells, such as are to be had in abundance along the sheltered nooks of the coast, and which are carried inland, by canal, at a reasonable rate, a long distance. This makes a pretty finish to a walk, and has the advantage of allowing the hoe to be used at times; and when the shells are crushed fine, they are certainly more agreeable to walk upon than most kinds of gravel. Observe, the walk must be *made* of other things, the shells only forming the outer covering; or colouring, perhaps, may be as suitable a name.

In rich garden soils, worms are very troublesome, and, in autumn, are apt to disfigure walks, by throwing up lumps of dirt in many places. The plentiful use of lime, in the making of the walk, is a good preventive; or cinders, clinkers, or even cinder ashes, is very distasteful to them, and must be more liberally used. The same top dressing as above should be the finishing coat. In dry, sandy, or gravelly soils, the walk is half formed by the very nature of the soil to be worked upon, and needs but very little foundation matter. Worms are also less prevalent here than anywhere else; but weeds are troublesome, and, unless a determined poisoning, or salting, be in store, provide for the use of the hoe, as directed above.

Walks formed in long or steep declivities are difficult to manage, owing to the injuries they receive from heavy rains. Forming these of concrete is not always a preventive: tar, or asphalte, is better, and must be adopted when great nicety is concerned,—the process being to form a level surface of stone, sand, and dirt, in a perfectly dry state. Over this pour some hot tar, which spread with a brush, made on purpose; and while this is warm and soft, scatter as much gravel over it as it will absorb, rolling it at the same time. A smooth, impervious surface is thus presented, which will last many years, provided there be no hollow places in it for water to stand, for that rots it. The making of such walks has resolved itself into a trade. Some men are very skilful at the job, and are provided with the necessary tackle for heating the tar on the spot, for it cannot be carried far. The work can only be done to advantage in dry summer weather.

Concrete is a less expensive article, but is not so good, it being neither more nor less than a quantity of lime mixed with the other materials. Builders' concrete is composed of powdered, not slaked, lime, sand, broken stones, and bricks,—all mixed together, and used immediately water is applied to it. The swelling of the lime, after the other materials are placed, is supposed to seal up everything. In garden-walk making, some use chalk instead of lime; but I never knew it stand well, although it certainly is a good adjunct where lime

comes too expensive; and it may often be used at the bottom of a walk, where it is plentiful.

I am in hopes the manufacture of cements will, eventually, furnish us with an article that may supersede asphalte, concrete, or tar and gravel. But, at present, cement is too expensive for general adoption; and it is only in those few places where bituminous substances exist in a natural state, that they can be had in quantities for purposes like this. But the great many purposes to which cement has of late years been applied, give reason to hope we may yet have it cheap enough to form walks.

The conditions which I consider necessary for a good walk are a smooth, hard surface, free from loose, hard particles; or, if the surface be loose, as in shells, let there be no lumps of hard gravel to hurt tender feet; for, next to a dirty, clinging mire, a path of loose, pebbly stones is, perhaps, the most uncomfortable. The pathways near many of our coast towns, being formed of sea shingle, are very disagreeable; but in some inland places a flinty gravel of similar character is found, imbedded, as it were, in a sort of red clayey material, which, taken as a whole, and of at least three inches or more in thickness, forms a tolerably good walk by being well rolled when the mass is wet. When it is dry, it becomes exceedingly hard and imperishable; but, if disturbed at that time, it could not be set again. Moss and other lichens disfigure it; but breaking it up in winter, and rolling it again, make it look fresh. Though this walk is generally clean, by the foot only resting on the stony portion of it, it is not by any means the most agreeable to walk upon; only it looks well, the colouring material often being all that can be desired.

Perhaps the prettiest of all substances for a walk is some of the spar gravel which is found in mining districts. In some places, a white gravelly, or gritty, article is also to be had, equal to spar. Some walks at Putteridge Bury (made by my worthy fellow-writer, Mr. Fish), were of this kind, and looked remarkably well. But, as good walks may sometimes be acceptable where pretty ones cannot be had, it is only right here to say, that plenty of usage, in the shape of foot-passengers, is the best to make a walk. The pathways in the parks of London would not be so smooth and hard, were it not for the thousands of passengers traversing them. It is, therefore, useless to expect a nice even walk, which, perhaps, does not accommodate half-a-dozen passengers a-day, and is, in other respects, a stranger to the roller. For good walks, like good houses, are the better for being used; and, like the latter, neglect is fatal to their well-being.

J. ROBSON.

SULPHUR AS A CURE AND PREVENTION OF VINE MILDEW.

IN THE COTTAGE GARDENER of the 23rd ult., I find a letter containing advice as to the cure of mildew in Vines; which said advice, taken as it stands, is, I think, rather calculated to mislead. The writer of it recommends the application of sulphur to the pipes and flues while hot, which, without doubt, will effectually cure mildew; but if the pipes are made too hot, or too great a quantity of sulphur be applied, it will injure the Vines as well.

I once had some Cucumbers destroyed by red spider, so I pulled them up, made the pipes as hot as possible, and painted them thickly with sulphur, keeping the pit closed during the time. When I opened it the fumes were so strong, that I was obliged to leave it open for some time before I could work in it with any comfort; and I feel convinced, that had there been any plants in it, they would not have been worth much after the operation was finished. With the pipes, or flues, moderately warm, a thin paint of sulphur may be beneficial.

But prevention is better than cure, and one great cause of mildew is, I think, the admission of draughts of cold air while the wood is young and tender. I would paint the Vines every year with a mixture of softsoap and sulphur, to which a little lime, or soot, may be added; and never open the front lights from

the time the buds begin to swell until the berries begin to change colour, by which time the wood is sufficiently ripened to stand cold draughts without injury. I have adopted the plan myself (in a house that had not been free from mildew for seven years), and met with great success.—A. A.

GROWTH OF THE MISTLETOE.

IN your No. 74, Vol. III., in reply to a correspondent, "AN INQUIRER," about Mistletoe, you promised to forward stamped envelopes to a friend, who offered to send seeds of the said plant to any of your readers. I forwarded an envelope, and in due time received several berries containing seed, with "let us know how you succeed" written on the envelope. I placed the seed, some in the V underneath the bark, and others on the bark, without making an incision,—all on the underside of the branches of my Apple trees, in a small garden in the suburbs of the town (Newcastle-on-Tyne). None of the seeds placed in incisions vegetated, I suppose owing to some error in the operation; but the whole of those placed on the bark, merely by the pressure of the thumb on the glutinous berry, vegetated, and produced the first season a leech-like sucker, which turned over and attached itself to the bark, about half an inch from where the seed had been placed. The second season the plant raised the seed-case up, and threw it off, producing two small leaflets, and the bark of the Apple tree was slightly swollen. In the third season another pair of leaflets were thrown out; but, from some untoward accidents in the autumn and winter of this season, all my plants, save one, were rubbed or broken off; and, as I was making some alterations in my garden, I cut off two of the branches of the trees where the Mistletoe had been, thus leaving me with only one perfect plant.

After the branches were cut, curiosity prompted me to examine the parts where the plants had been, and, to my astonishment, I found five or six rootlets from each between the inner and outer bark of the tree, and, of course, I much regretted having cut my trees. But I still had one plant left, which, the fourth season, threw out two branches and two pairs of leaflets. But the winter came, and my last plant was broken, or rubbed off.

From my former experience, I had hopes of seeing it start the fifth season, and was not disappointed, as it threw out two strong branches, increasing rapidly every season since; and it is now, I am informed by my successor in the garden, nearly nine inches long, having five branches, apparently in the most perfect health.

I wonder so interesting a plant is not more cultivated; but I presume the slowness of its growth tests the patience of many of our gardening friends.

I have now moved to a new place, three miles out of town, and have a good many varieties of ornamental shrubs, which have been out two winters,—a list of which I shall be glad to give you, with remarks on the hardiness, or the contrary, of each variety in my neighbourhood, if you think it would be of any service to your numerous readers.—CYGNET.

[We shall be much obliged by the list you propose.—EDS. C. G.]

NOTES ON NEW OR RARE PLANTS.

STATICE MONOPETALA, L. Nat. ord., *Plumbaginaceæ*. Native of North Africa and the South of Europe.—Stems and branches fruticose, sparingly covered with foliage. Leaves entire, linear lanceolate, somewhat spatulate, sheathing at the base, thickly covered with whitish dots. Spikes lax, scaly. Flowers solitary, far apart. Calyx green, undivided, and scarcely increasing. Tube of the corolla incurved; limb salver-shaped, large, bright rose.

A very nice species of Statice, and nearly hardy, requiring only the protection of a cold frame in winter. It may be cultivated in pots, with good success, in a compost of good turfy loam, with a little peat or leaf mould, and a little sand. The drainage must be perfect. But the plant succeeds best planted out in summer, in good common garden soil, and lifted in autumn before frosts set in; or better practice would be, to keep up the stock annually from cuttings, as it roots very freely. Blooms in July and August.

SCHUBERTIA GRAVEOLENS, Lindl. Nat. ord., *Asclepidaceæ*. Native of Brazil.—Stem twining, moderately strong, quite villous. Leaves cordate, variable in form, from obovate to ovate acuminate, covered with brown, villous hairs; veins rather prominent on the under side. Inflorescence an umbell of seven or eight flowers,

Peduncles longer than the petioles, pilose. Calyx green, of five acute, ovate sepals. Tube of the corolla inflated at the base, and contracted near the middle; quite nude within the tube. Limb of five spreading ovate segments, pure white, covered on the face with long, white, villous hairs.

A very fine stove twiner, bearing a striking resemblance to the much-favoured *Stephanotis floribunda* in the form and colour of its flowers, and strongly like it, but not so agreeably scented. The leaves have rather a strong fetid smell when rubbed between the fingers. It flowers during September, October, and November. When the flowering is well over, it should be gradually brought to rest. About the middle or latter end of March, the roots should be carefully examined, to ascertain if they are in healthy condition or not. When diseased, or dead, portions may be cut away, and the plant repotted in rough fibry peat and loam, with a good portion of rough, clean sand. The drainage must be carefully secured. A short time after potting, it should be plunged in good bottom heat, and water given according to its increasing luxuriance. It strikes from cuttings, but not freely.

INDIGOTERA DECORA, *Lindl.* Nat. ord., *Leguminosæ*. Native of China.—Habit somewhat straggling, shrubby. Branches, in a young state, rather glaucous. Leaves unequally pinnate, with from seven to eight pairs of exactly oval, slightly mucronate, smooth, fresh green leaflets. Inflorescence in long, slightly curving, horizontal racemes. Calyx membranaceous, distantly five-toothed. Standard nearly flat, slightly keeled, rose-coloured. Wings narrow, lanceolate, slightly ciliated, pale rose. Keel narrow, with the upper margin somewhat villous.

A very handsome greenhouse plant, flowering profusely in the early summer months, and sometimes also in autumn. It requires a compost of turfy loam, with a little peat and sand. Propagates freely enough from cuttings of partially ripened spring shoots.

ADAMIA VERSICOLOR, *Fortune*. Nat. ord., *Hydrangeaceæ*. Native of China.—Habit dwarf, frutescent. Younger branches covered with brownish down. Leaves oblong, acute, sharply serrated, narrowed at the base into a short petiole; midrib and veins prominent below. Inflorescence paniculate, ramified in a cymoso manner. Peduncle and pedicels downy. Calyx adhering by its sides to the ovary, shortly five-toothed. Corolla usually of seven petals, lanceolate; in the bud white, changing, on expanding, to clear violet, and becoming paler with age. Stamens numerous, bright violet. Pistils three, also blue.

This fine plant is not so much patronised by lovers of beautiful flowers as its merits deserve, which is the more surprising, because it is sure to give satisfaction if treated in the proper way. It may, by forcing or retarding, be had in bloom at any season of the year. After it has done flowering it should be brought to rest, which, if it happen in late spring, or summer, may be accomplished in any cool place, covered with glass; but, in autumn or winter, it is better to be done in the intermediate house. After due rest has been given, the branches should be well shortened back, the roots examined and reduced, giving, at the potting, good turfy loam, a little leaf mould, a little moderately-decomposed cowdung, and plenty of sand. The drainage should be carefully attended to. The plant may then be placed in mild bottom heat, to start, applying water carefully till it begins growing, when it will take copious supplies of it; and will be benefited by an occasional dose of liquid manure. The bottom and atmospheric temperatures should increase with the strength of the plant, till it begins to flower, when, to induce it to last longer in bloom, they may be lowered. It will fail to please after the third year's growth from a cutting, as, with increasing age, it naturally becomes "leggy" and bare at the bottom; but, as it roots freely from cuttings, there is no difficulty in keeping up creditable plants.—S. G. W.

A DESCRIPTIVE LIST OF POTATOES.

(Continued from page 115, Vol. XX.)

PROLIFIC FIRST FRUIT.—Sent out in 1857, by Mr. James Goble, seedsman, &c., Bicester, Oxon. This is a *White Kidney*. Excellent eye, handsome tubers, moderate growers, and good cropper.

SCOTCH DON.—This variety was, a few years back, a great favourite in Scotland; but, I believe, it is now nearly extinct, in consequence of being so liable to the disease. It is, however,

a very excellent Potato. Full sized, good eye, heavy cropper, and a good keeping variety. Rather a strong grower.

CHESTERMAN'S SEEDLING.—A very good second early variety, similar in shape to the *Lapstone Kidney*. Nice even eye, large size, and moderate haulm.

DR. NELSON'S FAVOURITE.—This Potato was brought into notice in 1853, by Messrs. Sutton, the well known seed growers, of Reading, Berks. I believe it was presented to them by the Rev. J. Nelson, D.D. This I consider a very good-flavoured Potato. Tolerable eye, full-size tubers, moderate haulm, a good cropper and well suited for a general crop.

CHAPMAN'S KIDNEY.—This variety was sent out about 1844, by Mr. Chapman, market-gardener, of Brentford End, and was at one time a great favourite. It is still a good variety, having but one fault—viz., being very liable to be attacked with the disease.

GLOBE (MARTIN'S).—This is a kind of *Regent* in appearance. Rather yellow flesh, large size, rather deep eye, moderate grower, and productive.

MATCHLESS (DAW'S).—This is a *White Kidney* Potato. Even eye, not a luxuriant grower, very productive on some soils, and a good keeping variety.

EARLY SURPRISE.—This is an excellent variety. Nice even eye, beautiful clear skin, full size, similar in shape to the *Fluke*, rather flat, not very luxuriant grower, but productive.

CORNISH KIDNEY.—This variety is, perhaps, not quite so well known as it deserves to be. Upwards of 300 acres are annually grown in the neighbourhood of Penzance, for the London and Bristol markets. It is a *White Kidney*. Tolerable even shape, moderate grower, and good cropper; something similar to the *Barbadoes Kidney*.

MUTCHE'S EARLY.—This variety, although not large, is very prolific. A weak grower; something in appearance like the *Early Frame*. A good early Potato.

SNOWBALL, OR FLOURBALL (RILOTT'S).—This is a very excellent Potato. Fine flavoured, very white flesh, requires careful boiling; full size, tolerable eye, moderate haulm, and good cropper.—EDWARD BENNETT, *Perdiswell*.

(To be continued.)

FAILURE OF THE CALCEOLARIA.

IT is unfortunate, but it seems nevertheless true, that Calceolarias are becoming less useful, than they were a few years ago, as ornaments to the flower garden. On all sides there is an outcry against them. Whole beds of them die off, or become so broken and gapped by plants dying out, as to disfigure the whole arrangement of which they were a part. It is difficult to account for this.

The past summer has been a dry one, and that of 1857 equally so, and the Calceolaria liking a cool, moist soil, its failure has, by many, been traced to this source. But I am far from certain that such is the case, for in moist situations it has been equally unsuccessful. Neither is fresh soil a renovator. There seems something difficult to account for in this. But we have certainly examples by us of a like nature.

Many years ago, the blue *Anagallis* formed one of the prettiest beds in the flower garden,—compact, healthy, and symmetrical in habit, with abundance of flowers of a colour and duration which we have nothing now to equal. But some insidious disease crept in, and ten or a dozen years ago solitary plants began to die off in the middle of the summer, followed by others. This evil increasing, led to the plant being abandoned by the flower-gardener, and it is seldom met with now; and it is to be feared the Calceolaria is following in its trail.

Last year, there were great complaints of the Calceolaria dying off in Lancashire, where it seldom lacks moisture; and this year, I am told, it is equally bad. I could point out many flower gardens where this plant failed this season. But with me its failure has been of a different kind to what it has been in other places, as I do not think a single plant of the shrubby kinds has died off during the summer; but they have flowered in a very unsatisfactory manner.

The plants were struck in a cold pit in the autumn, and stood there all the winter, and were planted out from thence into the beds at the end of April, the plants being bushy and strong. The first batch of flowers was pretty good and abundant; but, dry weather setting in, there was but a very imperfect succession, and the beds never looked well the whole summer afterwards. The kinds of yellow grown were *aurea floribunda*, *viscosissima*, and

plexicaulis, *rugosa*, and *salvifolia*: the last-named is certainly the best for continuous blooming, although it is long-jointed and lanky-looking.

During September the plants grew apace; but there were few flowers, except on *amplexicaulis*, and that sparingly, so that the beds of *Calceolaria*, as a whole, were far from satisfactory. As they were about the same last year, I fear the best period of *Calceolaria* display is past; and perhaps the only way to restore them again is, to have recourse to the original kinds to breed from. But even this promises but little, as a neighbour of mine grew the old narrow-leaved *C. angustifolia* with no better success than some of the more recent ones. With me, also, the old *C. rugosa*, which ranks backward as far as 1829, or even earlier, was as shy in flowering as any kind we have.

I am unwilling to believe that there is any constitutional debility in the way; but I am totally at a loss to account for the plant not flowering well in moist places. Another season will, perhaps, determine this. Old worn-out soils are not in every case to blame, for I planted some on ground that had not been in tillage for thirty years or more, with no better success than elsewhere. However, I hope that others will come forward, and give the result of their experience in this matter, and let us learn all we can about this, I am almost inclined to say, indispensable flower-garden ornament.

If recourse to the original species of this plant again does not result in its doing better service than it has the last two years, we must look round for some other plant of like colour and merit. But I fear it will be difficult to find a substitute for it, in its various merits of symmetry, hardihood, colour, and general adaptability to all circumstances. Nevertheless, we may expect to find some of our old familiar faces in the flower garden die off from our view, to give place to newer introductions. Why this should be with species having a botanical distinction I have yet to learn; but I do not at all doubt that varieties will wear out; yet whether this be in ten years or a hundred, it is needless to argue here. It is certain, however, that the hybrid varieties of *Calceolarias* are not so near to being healthy, in many parts of the country, as they once were; and whether they will cease their usefulness at once, or prolong it under favoured circumstances, will be seen in the sequel. At all events, those who have found the *Calceolaria* to thrive and flower as well with them the last two years as they did before that time, will confer a great favour on the flower-gardening public, by stating what description of soil they were grown in, and other features of their treatment.—J. ROBSON.

BEE-KEEPING IN DEVON.—No. VI.

CRANIOLOGY—EXTRAORDINARY DEVELOPMENTS—EFFECTS OF BEE-POISON—SUBSTITUTE FOR A BEE-DRESS—UNCONDITIONAL SURRENDER—STRENGTHENING WEAK STOCKS—ATTEMPTED FORMATION OF A NEW COLONY—A DARK NIGHT—THE BLIND LEAD THE BLIND—EARLY RISING.

HAVING effected a not very dignified retreat, I proceeded to examine my wounds. Like Pompey's soldiers, my face was my first care, and this I was well satisfied to find had escaped with a single sting, which, however, was sufficiently near the eye to have caused partial blindness in most persons. Hastily withdrawing the barbed weapon, I quickly performed the same operation on my wrists, wherein some dozen stings had been implanted, above the protecting gloves. Next, I passed my hand lightly over my cranium, where I found such a multitude of bumps as might have driven a professor of phrenology to distraction. As the discovery and extraction of so many stings from amidst the hair would have involved the sacrifice of more time than I could then devote to it, I amused myself with the idea of the porcupine-like appearance which my head would have presented if the little spears could have been perceived, and quietly set down the novel developments as so many additions to the organ of "cautiousness." Before dismissing the subject, I may state, that these trifling swellings soon subsided, and a slight sensation of soreness during the next day or two was the only inconvenience experienced from the largest dose of bee-poison it has been my fortune to imbibe.

Calling a council of war, I honestly confessed my mistake, and received a due amount of good-natured reproof for not making earlier mention of an omission that could so easily have been supplied. Two or three old veils and pieces of net, rapidly run together by the nimble fingers of a "neat-handed Phyllis," soon formed an efficient substitute for the missing bee-dress, and I

found myself in a condition once more to take the field. This time the contest was not prolonged. The brave garrison, finding themselves overmatched, speedily surrendered at discretion.

My progress was now easy. Before the day closed I had driven in all five stocks. Profiting by the experience already recorded, I resolved to convey my little captives by hand; and, therefore, engaged a couple of men to assist in their transport to the heath, about two miles off. One of my assistants was fortunately an old bee-keeper, who professed to have no fear, either of bees or their stings, and I gladly availed myself of his services in the concluding operations of the day.

The fine weather we had enjoyed during the past week now showed evident signs of breaking up; in fact, some drizzling rain had fallen in the afternoon, and a heavy canopy of clouds promised an exceedingly dark night. Still sufficient twilight remained to enable us to direct our steps in safety. Diverging from the high road, we took our way through a plantation, and across the heath, thereby shortening the distance nearly half-a-mile, at the cost only of a more rugged path.

Arrived at our destination, the bees from a couple of old stocks which had swarmed this year, and were, therefore, selected as being sure to have young queens, were speedily knocked out of the straw hives in which they had been temporarily lodged, upon two cloths spread on the ground, and were as speedily surmounted by No. 1 and No. 3 (shallow eight-bar hives), slightly raised on sticks, in the manner already recommended for swarms. The three remaining hives were also rapidly emptied on one cloth, and surmounted by an entirely empty seven-bar box, the guidecomb with which it had originally been furnished having been destroyed with the bees during my former unfortunate journey.

Everything that could at present be done having been accomplished, my bee-keeping assistant picked up the empty hives and slung them across his shoulders, perfectly regardless of the few stragglers they might contain. Bidding adieu to the friendly cottager in whose garden my hives were located, we plunged into the darkness, and directed our steps towards the village where I was to pass the night.

Such of the readers of THE COTTAGE GARDENER as may have done me the honour of perusing my communications, will readily believe that the adventures of the last few days had involved a vast amount of personal fatigue. When, therefore, we came to the by-path over the heath, the temptation of saving half-a-mile's walking, added to the assurance of my companions, that they knew every inch of the road, and could find the way as readily by night as by day, proved too strong for me, and I suffered myself to be persuaded into quitting the high road. The night had fulfilled its promise, and turned out one of the darkest I ever saw. Rallying my flagging energies, and being in excellent spirits at the successful result of the day's proceedings, I made my bee-keeping friend lead the way, the light colour of the straw hives he was carrying serving as a lantern to direct my steps. Great was the merriment occasioned by his stopping every now and then to rub himself, as one by one the stray bees about the hives found their way under his clothes, and testified their presence by what he called "biting" him. Nor was the fun diminished, when the sudden disappearance of the beacon-lime warned me more than once of some unseen obstacle which had prostrated the pioneer. The bursts of laughter provoked by these incidents must have astonished the glowworms whose pale lamps gleamed on either side our path, and

Studded, like gems, the sable garb of night.

Just before emerging into the high road, we reached the climax of our amusement, by a couple of us experiencing in a (fortunately dry) ditch the consequences foretold of the blind leading the blind.

I was a-foot so early the next morning, that I was able to brush off two pretty large clusters of bees that had formed on the outside of the empty box, without much fear of their taking wing in the imperfect light of the grey dawn. I then waited till these had ascended with the others, when I placed the three hives upon their respective pedestals. Having ascertained at the same time, that the cluster of deprived bees in the box (which I denominated No. 4) was at least equal to a good-sized swarm, and that No. 1 and No. 3 were now well populated, I took my departure homewards, satisfied with having effected my object, after the failures which I have recorded, in the hope that others may feel interested in, and possibly benefit by, the experience of—A DEVONSHIRE BEE-KEEPER.

P.S.—My friend, Mr. S. B. Fox, will, I am sure, excuse my re-

minding him, that both Mr. Tegetmeier and myself may reasonably anticipate a greater degree of success, in our endeavours to form vigorous stocks with bees expelled from their hives by "driving," than has attended his own experiments, in which "fumigation" has been resorted to.

QUERIES AND ANSWERS.

PREVENTING MILDEW ON VINES IN A COOL HOUSE.

"I shall feel greatly obliged (and I doubt not many other subscribers will be equally so), if you can suggest any plan of treating Vines at this season (and up to the time when the leaves and fruit again appear), by which we can prevent mildew, or Vine disease, now so prevalent. In a house where I have hot-water pipes, I managed—by great care and plenty of sulphur—to keep the Vines tolerably free; but in another house, where there is no heat, and also on an outer wall, where formerly I had excellent Grapes,—later, of course,—there, the entire crop was this year destroyed. The disease first appeared about the time the Vine was in bloom: a few leaves got spotted with whitish powder (rather clammy). This extended, and then appeared on the small young Grapes, and also extended from bunch to bunch, till all were covered. I have tried syringing with various preparations. I have washed every bunch with soap and water, and then syringed; but although this removes most of the mildew, yet the Grapes do not expand,—they crack and wither. Now, is there any remedy to be applied to the Vine itself,—roots or branches? If not, and there is no chance of the disease ceasing spontaneously, one had better root up the Vine, and plant afresh. But this involves the loss of years, and the disease may equally affect the new Vine. I have just heard of Price's new soap to cure this disease, but want faith in its efficacy; and I am sure, that, if you can point out any tried and efficient cure for this evil, your assistance would be highly valued by the public at large, especially by—A. L."

[Paint your Vines, stems, and branches, and the entire of your viney and wall, with a mixture of lime, flowers of sulphur, soft-soap, and water. So soon as the Vine-buds begin to swell in the spring, sprinkle flowers of sulphur over the borders. During their growth in summer, though no mildew is perceptible, fill the house occasionally with fumes of sulphur, by placing some on plates of iron kept hot by boiling water. You can easily do this by many simple modes.—EDS. C. G.]

DISEASE IN WELLINGTONIA GIGANTEA.

"I have several plants of the *Wellingtonia gigantea*, about two feet high, and have observed, within the last month, that some of the terminals of the lower branches are dead; and several of the large branches appear to be dying, the bark turning brown on the young green branches, in patches about half an inch in length, and extending nearly round the bark, which must eventually kill the branches so effected. Have you, or any of your readers, observed such appearances on their plants? Dampness cannot be the cause, as they are in a dry situation."—G. T. F., *Leek*.

[We shall be obliged by information in answer to this query. Perhaps "G. T. F." will split one of the dead terminals. They may be bored longitudinally by some of the Pine Beetles.]

ENTOMOLOGICAL SOCIETY'S MEETING.

THE November meeting of the Entomological Society was held on the 1st. inst., the chair being occupied by the President, Dr. J. E. Gray, F.R.S., &c. Amongst the donations were the publications of the Natural History Societies of Vienna and Lyons, as well as those of the Societies of Arts of London and Liverpool.

Mr. Westwood exhibited specimens of the Death's Head and Convolvulus Hawk Moths, taken in Oxfordshire during the past autumn, and which he had set out with the legs and proboscis extended, with the view of displaying the characters afforded by those portions of the insect's structure (which are too often neglected), as well as contributing considerably to the elegant and

symmetrical appearance of the specimens when arranged in the cabinet. He also exhibited specimens of the workers of a blind species of Ant, from Brazil, allied to the African genus *Anomma*, which he had lately received from the Danish entomologist, M. Drewsen.

Mr. Samuel Stevens exhibited a number of fine Beetles, recently received from Celebes, where they had been collected by Mr. Wallace.

Mr. F. Bond exhibited a specimen of *Hama dumerilis*, a Moth belonging to the family *Noctuidæ*, and of such rarity in this country, that only a single specimen had previously been known, which was in the collection of Mr. Robertson, of Limehouse, taken in Scotland. It had been captured by Mr. Seeley, in the South of England.

Mr. Gorham exhibited a new Microlepidopterous insect, belonging to the family *Tineidae*, named *Coleophora virgaureæ*, from Westerham, taken on the Golden rod, the larva of which makes a moveable cylindric case, in which it resides, bearing it about with it like a snail does its shell.

Mr. F. Stainton exhibited a new British Noctinaceous Moth, *Miera parva*, which he had taken with *M. ostrina*, at Torquay. The former of these two species had only been known previously as a native of the South of France.

Mr. F. Smith gave an account of a blind species of Ant, in the collection of the British Museum, from India, belonging to the genus *Ecton*.

A note was read from Mr. Diggles, on the habits of some species of *Lepidoptera* and *Formicidae*, of Moreton Bay, Australia; on the production of formic acid by the latter; on the peculiar smell emitted by the green species of Plant Beetles, belonging to the family *Chrysomelidae*; and on the effects produced by dropping the Bombardier Beetle into hot water, the heat causing the crepitating vapour to expand and explode, shattering the body of the insect to pieces.

Mr. Wright sent a notice of a small insect, parasitic on the stickleback. Mr. Stevens stated that M. Muat had recently started on an entomological excursion to Siam. And Dr. Gray gave some particulars respecting a small Homopterous insect, with membranaceous lobes on the sides of the body and limbs, found on the leaves of the Maple.

WHAT COVERING SHOULD THE OUTSIDE ROOTS OF FORCED VINES HAVE?

As the forcing season is now commencing, it has brought to my mind a question, which has occurred to me before—viz., What benefit is derived from covering Vine borders with hot dung? None, that I can see; for the roots are generally six inches below the surface, often more; and I do not think that the soil will get heated to that depth, for heat has a tendency to rise, as one may easily find out by placing the tea-kettle under the grate some evening when there is no hurry for tea.

I know a nobleman's place, where they make it a rule always to have ripe Grapes by the beginning of April; and the only covering they give the Vine roots, which are all outside, is about six inches thick of partially-decayed Oak leaves, put on a week or so before they begin forcing.

I may be wrong in my ideas, and, if so, perhaps some of your correspondents will put me right.—A. A.

THE HEXAGONAL CELLS OF BEES', AND WASPS' COMBS.

IN my previous paper on the secretion of wax by bees, amongst other things I stated that the queen wasp made cells large enough to admit her head. Since then, I find that Mr. Smith stated the contrary at a meeting of the Entomological Society, on October 4. He did so in opposition to Mr. Stainton's assertion, "that the angular position of the ocelli in front of bees' heads might be the cause of bees working the wax into a hexagonal form." I pass over this at present, to state that there is no foundation for Mr. Smith's opinion. If the cells built by the queen wasp are too small to admit, not only her head, but also her abdomen, how could she deposit eggs, or feed the grubs in them? In fact, such an idea is at variance with the grand object for which the cells were made. This also applies to the hornet, and to all the race of humble bees, whose queens begin

their nests alone in spring. The cells of wild bees, however, are round; and I fully agree with Mr. Smith's statement, "that on no principle of pressure or approximation would the bee alter its form to a hexagon." I also consider, that his objection to the cells of wasps, made by the queen, not being shaped hexagonally by the aid of the ocelli in front of her head, like those of bees, was not fairly met by the following:—"Neither could the same argument be applied to wasps' cells as to those of bees, the material of which the former were made being totally different to that of the latter." Supposing that the foundation of the cells of both was round, there is no reason why the paper-like material of the wasp, which is mixed with a gummy substance, could not, when soft, be as easily pressed into a hexagon form as that of wax by the bee. However, the foundation, or rather the embryos of the cells, of both insects, seems to be triangular—in fact, part of a hexagon. And I have to note, that the waxen ones show no signs of pressure, but rather the rough marks of the insects' mandibles, when at work with the ocelli between them. With that curious appendage, bees seem to give the foundation of their cells the angular form; and perhaps upon it hinges the whole mystery of them making the beautiful hexagonal ones. But, as they also make round ones for queens, and those of different forms on the edges of the combs, it seems that they have the power of using their ocelli, to give their cells the angular shape, according to circumstances. I hinted this in my paper on "Bees secreting wax," at page 108.

When making these remarks, I am well aware that there is still much hidden from us, as to how bees build their cells. For instance, how do they make the large hexagonal ones of drones, with the same ocelli, or *shape*, that forms the workers' cells, which are about one third less? However, as regards those of wasps, they do not vary in shape, and but little in size. I have learned something on this curious subject, by observing the queen hornet making cells with her strong mandibles moving between the large, yellow, triangular ocelli on her forehead.

In connexion with this subject, I may observe, that little can be learnt from offering bees coloured wax, or dying the foundations of their cells, for others are tinted with it from the traffic of the bees. This is well exemplified in the circumstance of the freshly made cells being soon darkened with pollen or propolis. Besides, the triangular foundation of the cells is so visible, that no marking is required to trace their forms into hexagons.—J. WIGHTON.

COOKING BEETROOT—A GOOD SALAD.

I BEG to call the attention of your readers to the fact, that Beetroot, if roasted, or baked in the oven, preserves its flavour much superior to the same vegetable if boiled.

I take the liberty of forwarding you the following receipt for winter salad:—Boil one or two onions quite mild; when cold mash them, and mix with sliced Celery and cooked Beetroot. Dress this salad with oil, vinegar, salt, and pepper. This salad, with hot meat, will be found very nice in the winter months.—BEETROOT, Redhill, Surrey.

SEA-KALE FORCING.

"WELL," my young friend, "this is the season for the leaves falling off, and, I assure you, I have had, in my day, many a load of them raked up and carted home. Yes, we had a great deal of forcing; and, let me tell you, young man, it is only those who have had the direction of such work, that really know the use of good leaves. Ay, ay, my man, I have been as anxious as well could be to get them up nice and dry, as those at Sir Thomas's. We had plenty of work for them."

"Yes, Bissett, I do believe you; but, although our gardener likes to lay hold of as many leaves as he can, and time allow of being done, yet, from what I have heard you say about your management in former times, it strikes me very forcibly, that our man goes to work on a different system altogether, and does not make so many uses of them as was generally done in your prime of life."

"Well, Edwin, as for that, I cannot answer you, you see, my young friend. But when I had a walk through the gardens of my lord, during summer, one thing struck my mind as being in a very queer place of the garden. Some of your fine-writing gentlemen, if you would only read what they write, would make you believe wonders; but I think, somehow, that you can read the

best writing of any gardener in this way, although I cannot walk much myself now, to do it. But, you see, I was going to tell you how I used to read gardeners' writing: I mean walk round any place, and there read their head and hand work, as seen on the broad pages of the gardens under their care."

"Very well, Bissett, but that does not always speak as the gardeners could desire. Consider his position and means."

"Yes, I know that as well as any one; and broaching such an idea shows you would like to have just measure. Well, but I was just about to tell you, I saw the gardener had his Sea-kale growing in a very strange place for such a thing to be in, and I wondered at it the more, as he is a writing-man. The Sea-kale he had growing close by one of the principal walks, and just where almost every person must see it."

"Why, Bissett, what of that? It is a low-growing plant, and you can see over it nicely. It does not obstruct the view, and it grows well in good soil."

"Yes," my young friend; "but your head is not yet so old as mine. That Kale is growing in single rows, just like so many rows of Parsnips, or any other thing like it. But, to grow Kale properly, it should be in good bunches together, so that you could cover a good lot under one pot; besides, I prefer to have mine on raised banks, and to have them at a convenient part of the garden, as near to the framing ground as possible, so that the leaves, or whatever we covered them with, should not make the best part of the garden unsightly. But only think where the gardener has his Kale."

"Oh! Bissett, I can see now what you are driving at. I can only tell you the gardener knows well enough what he is about, at least with his management of Sea-kale. I could not well fancy what you meant about your collecting and management of leaves; but, bless you, Sir, he never makes use of them about his Sea-kale. However, if he does, it is very little indeed. Why, Bissett, he never forces it where it grows. The old-fashioned way, with leaves and dung, was something like old stage-coaching to the railways. You might, or you might not, get by a certain coach, and the coach-fare was often only three-quarters of the price for your ride; but you can always make sure of a seat in a train by rail, and without extra charges: So the gardener takes up all his Sea-kale, and forces it by steam, or, at least, hot water, in a house where he grows his Mushrooms; and, after a little practice, it can be had this way at any time, if you only put in roots enough at stated times. Why, without turning dung, or leaves, or going to dig it up, when covered with frost and snow, it is had at any time, from the middle of December to as late in the spring as you can keep it; and, besides, you can dig over where it grew and use it for another crop."

"But how does he get his plants every year? Is it by seed?"

"Oh! Why no, Bissett, I never saw it grown from seed. He saves all the best of the roots that are taken off when taken up. These are planted about the end of April, and, if well done, make good plants by autumn, fit for forcing."

"Well, well," my young man, "you have now explained what I could not read through. Steam and hot water are made to do many things now."—G. DAWSON, Fulham Nursery.

FRUIT GROWING ON TWEEDSIDE.

THIS year has been very favourable for fruit here, as I suppose everywhere else. Pears have done well everywhere in this district, and the list of what will grow, and may be grown, in our country, is now more extended. There are some not yet ripe, and, therefore, not fit to be reported on. However, what succeed here on dwarf standards (*Quinces*), pyramids, or bushes, are—*Citron des Carmes*, *Jargonelle*, *Louise Bonne*, *Marie Louise*, *Beurré d'Amanlis*, *Broom Park*, *Thompson's*, *Orpheline*, *Knight's Monarch*, *Duchesse d'Angoulême*, *Beurré Rance*, and two others, of which, unfortunately, I have lost the pedigree. I rather think one is a *Doyenné*: it is a thick Pear, short stem, and reddish-brown skin on the tree, and becomes light-hazelly coloured when ripe. I ought also to have mentioned *Williams's Bon Chrétien*. Well, now, there is a very good lot for the far North, and what, as a Scotchman says, we are *sure* about. I have no doubt there are many others now in cultivation that will yet take their places here as dwarf standards. The *Citron des Carmes* began to ripen about the 20th of July, in the orchard, and *Jargonelle* about the 20th of August. Of course, they were this year a good deal before time; but I allow nothing to grow near the roots of my trees, keep the ground clean, and well raked

and the sun warms it, and brings things on more rapidly, as well as to better maturity. A *Louise Bonne* carried twenty-five dozen of fruit. It is a handsome pyramid, about six feet high, and was, when in fruit, a great beauty. A *Soldat Laboureur*, of the same size, had forty dozen, and a smaller one twenty-five dozen. But this is cruel to the little trees, and I shall take care to thin them well another time. A *Duchesse d'Angoulême*, the roots of which I covered with glass, carried eleven dozen (many of them 9 ozs. in weight), and was the wonder of the Tweedside world, as well it might be. I hold that the warming of the tree, by the glass covering over the roots, enables it to set better, and to bear better and larger fruit. That is a thing demonstrated by the experiment I have made. When the glass remains on during the summer, it is necessary to apply water to the roots. The *Marie Louise*, for the first time this year, has carried fruit on pyramids; but they appear to me to be on the Pear stock, and not on the Quince; and this is, probably, the reason why they have been so long in doing anything. Therefore, the *Marie Louise* will do here as a standard, both on the Pear and Quince: for a tree, which I gave to a gentleman, on the Quince, carried a crop of good Pears, and I have also seen them, in another place, on the Quince.

I have an *Urbaniste*, which I removed from the orchard to a wall, and I think of all the fruits I ever tasted (I do not mean of Pears, but any other) it is the finest. The fruit is large, and handsome, too, and its quality unapproachable; far superior, in my opinion, to any *Marie Louise* I ever tasted. There is, evidently, something in locality which brings out the peculiar qualities of fruit. What is good for you, may not be good for us; and what may be good here, may prove worthless with you. So we must just try, and try again, and often fail, but sometimes succeed; and I do believe that it is all but impossible to tell beforehand what will absolutely suit any one place.

The *Napoléon* is wonderfully shy about setting. I must try the power of a glass cover for the roots. I have three trees, but have not had six fruit from them all in ten years. Even this year, I had but four Pears. Some fruit trees form pollen at a lower temperature than others,—this is a constitutional difference; and for some of the French Pears we have not heat enough in our climate to burst the pollen. This appears, to me, to be the real difference between hardy and tender sorts. Where the blossoms are large, their cup reflects heat upon the parts of fructification, and helps to burst the pollen; and, I observe, whenever we get thus far, we get farther, for we get fruit. Now, you will be inclined to laugh at this, but I have been watching it a little, and it is a track of thought which I shall follow out, if spared till another season.

The *Winter Ruby* is a valuable Apple for this county. It is large and handsome when ripe, a very good bearer, and will keep on till April, and would be still better in the South. The tree grows little wood. The *Cockpit* is well known in the North of England, and on the *Paradise* stock is a prodigious bearer. It is the most certain Apple we have, and, though but of medium size, yet is very desirable here. It keeps well on towards March, and is useable now. The *Alfriston* yields large crops of fruit, of the largest size, from the *Paradise* stock. The *Golden Noble* is one of the most beautiful Apples we have.

Now, you have, no doubt, better Apples than these, and can afford to overlook them; but some of your best would be useless as standards for us. There are some noble-looking Apples which do well with us, such as *Bedfordshire Foundling*, *Mère de Ménage*, *Reinette du Canada* (first-rate); but, usually, the larger and more enduring sorts are but shy bearers. *Atkins's Seedling*, apparently from the *Hawthornden*, is a dwarf grower, on a free stock, a great bearer, and, though smaller than its parent, will keep in good condition up to March, and be useable the whole winter.—R. O. B., Kelso.

THE LATE REV. W. C. COTTON.

I LEARN from a paragraph in a local journal, that bees were introduced into Wellington, New Zealand, in 1842, and into Canterbury, in 1852. The first-mentioned is the year in which "My Bee-book" appeared, and astonished the aparian world by the profuseness and beauty of its illustrations. It will be remembered, that the lamented author anticipated being the first to introduce the honey-bee into the colony, and entered very fully into the various contrivances he intended to adopt, with the view of preserving his little favourites during their voyage to the

Antipodes. It now appears, that, if successful, he would have found himself forestalled, and this may, perhaps, in some measure have consoled him for his failure; the circumstances of which were rather singular, and are not, I believe, generally known.

It seems the voyage out was so remarkably stormy and protracted, that the sailors, with the usual superstition of their class, insisted that some sinister influence was the cause of the adverse war of elements. This sinister influence was ascribed to the presence of the poor bees, and so strong was the belief, that ultimately the hives were taken forcible possession of, and all thrown overboard, to the indescribable grief and disappointment of their amiable and enthusiastic owner.

These particulars, with which I have only recently become acquainted, may possibly be as interesting to others as they were to—A DEVONSHIRE BEE-KEEPER.

NOTES FROM ASHTON-UNDER-LINE.

IN NO. 525, I see an article by Mr. Appleby, on the best mode of removing the Holly, in which I entirely concur. Four years ago last May, my employer ordered me to get up about two hundred, from fences and woods. They had never been prepared, and had to be brought three miles to our place. They were from two feet to twenty feet in height.

Being near to plenty of grey bog moss, I secured a quantity, for the purpose of laying over the roots of the large plants. They were got up with as convenient balls as possible, and sowed in what are here termed "cotton bags." They are formed of a kind of cloth that cotton comes in from India. The roots were covered with moss before being stitched up. One half we never unstitched, but planted them with both bag and moss. We lost about 15 per cent. of those unstitched, and 50 per cent. of those not so treated. Some that we never unstitched did not lose a leaf more than was natural, and are fine trees, at present looking very healthy. Mr. Appleby's plan is far better; but circumstances alter cases.

In this neighbourhood, Apples are smaller this year than they were last year. This season, the weight of the largest was seventeen ounces and a half; last season, twenty ounces and a half. The kinds chiefly grown here for exhibition are—*Lord Suffield*, *Grenadier*, *Pomeroy*, and *Alexander*.

We have few kinds of Pears near the town, and I do not remember any special shows of them, as of Apples.

Potatoes and other vegetables are good. At one of our shows, some *Fluke* Potatoes were exhibited, weighing twenty ounces each; and a gentleman farmer had 420 pounds of Potatoes from seventeen pounds of sets, or seed. Here, the kind is called *Rigby's Seedling*: it is nearly like the kind called *Radicals*, and said to be good boilers.

At the same show, Celery was not so heavy as last year, about eleven pounds being the largest shown for weight; whilst there was some shown last season weighing sixteen pounds.

For Peas, or flowers, outside, the season just passed has not been very good. The Peas were scarcely half a crop. *Kidney Beans*, with me, are first-rate, planted on a heavy soil.

Mr. Beaton is quite right about Chevreul and his arrangement of colours. I tried to follow his rules in our geometrical garden, and to some extent succeeded, when I viewed it from one position; but it was a great failure when seen from any other place.—JOHN HAGUE.

TO CORRESPONDENTS.

VARIEGATED HOLLY (*A Country Subscriber*).—It is very beautiful, and we advise you to propagate it by grafting on stocks of the common Holly. We think it is a novelty. We have long had a general index under consideration. If you wish to complete your set, do not delay long, as the earlier volumes are becoming few, and cannot be reprinted.

SALT, &c., FOR ASPARAGUS BEDS (*P. B.*).—House sewage and salt are both very beneficial to Asparagus. Salt may be given at the rate of ten bushels to the acre, three or four times between March and October. House sewage, such as you mention, diluted with an equal quantity of water, may be given once a-week during the same period.

BOOK-KEEPING (*Short of Education*).—The treatise in "Chambers's Educational Course" will suit you.

ALMA POTATO.—S. C. M. writes to us as follows:—"Will your correspondent 'Mr. E. BENNETT' say, whether he knows of any really cross-bred kinds besides that named *Alma*. Of course, I mean sorts of good quality. I would also be much obliged, if he can tell me when they were raised; whether, in crossing for them, the anthers were removed from the mother plants; and whether and where it would be possible to get a

few eyes of each kind at a moderate price? I wish to get them for the purpose of trying some experiments in crossing."

BUDGING VINES (West House).—They can be budded, and the best time to perform the operation is when the sap begins to flow. This is in early spring, when the Vines are out of doors, but varies with the temperature in vineeries. When the buds commence swelling is the time there.

TRITOMAS, &c. (R. Anderson).—Nobody can yet tell if all *Tritomas* are hardy. *T. uraria* is most likely to suit you. *Eucharis amazonica* is a stove bulb, but might be moved out of doors in summer. The best Gladioliuses are those produced by crossing *oppositifolius* and *Natalensis*, of which is *Gaudavensis*. They are in all bulb catalogues. We have frequently given lists of herbaceous plants.

TRANSPLANTING LARGE MYRTLES (A. D.).—Myrtles are easy things to remove, on account of the vast number of small roots they make. We never yet met with a Myrtle with long, bare roots; but if we did, we should need to take it up with much greater care than is usually necessary. The last half of September is the best time to remove Myrtles, where they require no protection in winter, as in some parts of Ireland, and the south of England. In all other places the rule is, to remove them when the Ivy is clipped, at the end of the spring; and that is, according to the season, when they make the first new leaves for another growth. At that particular time the Ivy is green again in ten or fifteen days after every leaf and young shoot is clean clipped off; and the Myrtle makes fresh roots equally quick, to supply the place of those that were cut or deranged at the moving. But, in order to make up for any lost time, it is a good plan to water Myrtles very liberally the first summer after they are transplanted. It is not a good plan, however, to mulch Myrtles in summer anywhere, if they must be covered in winter, and for this reason,—all plants root up towards the surface, more or less, if they are mulched in summer, and by encouraging the roots of half-hardy plants to the surface, they are more exposed to the frost. Such plants ought rather to be mulched in winter, to keep out the frost, and to go bare in summer, to cause the roots to seek away from the sun. Standard Myrtles are usually too much top-heavy for the strength of the stem; therefore, they need supports more, and much longer than more common plants; but they do not like stakes. Three ties from half-way up the stem to three stakes driven into the ground, and sloping inwards, like tenthooks, are best. Such stakes, or hooks, should be only one inch out of the ground, and from ten to eighteen inches below the surface.

STRAWBERRY FORCING, &c. (A. Surrey Subscriber).—Strawberries are not put into houses till they are beginning to go out of bloom. Some plants are now in cold frames, or other cool places, for the first crop, and people bring them forward according to their convenience. Ours will be in cold frames to the end of February, when we begin forcing the Peach-house, to which they will be removed, and remain there till they are fit for the hothouse. Some people can never put them into hothouses, and only give them a top shelf in a greenhouse: February is early enough for that. It is a question of convenience entirely. If the gardener had used "cow-dung to Chrysanthemums, according to our advice," he would have been right. But their roots will make suckers, and suckers will make plants next year. Spruce and Scotch Fir are the best to hide the building. Ranunculus come as easily from seeds as Cowslips, and in the same way, and both are equally difficult to get good sorts from seeds; but good seeds of good kinds of them, and of Aster, will produce some good seedlings, if the flowers were not contaminated with bad sorts. All depends on that.

CERASTIUM TOMENTOSUM CUTTINGS—VARIEGATED MINT (C. W.).—The best way to increase *Cerastium tomentosum* is by cuttings in the autumn, or in the spring, exactly like *Vernera* cuttings. Every morsel of the young tops will strike under a handglass in August and September; but in March and April the quickest way is to do it like the little blue *Lobelia*s, and it roots just as fast as they do. In dry, healthy soil, a good edging of it ought to last three or four years; but we are not quite sure of that in practice. Forty years back it used to keep, in patches on rockwork, for ever so long, much longer than *Aubretia purpurea*, and it had to be cut round the edges every spring, to keep it from spreading too much. The variegated Mint must be renewed by cuttings every year, for edgings; and they root in the autumn without glasses; but for planting with variegated Geraniums, it is sufficient to take up the old plants, or roots, in April, and to divide them into small pieces, or patches, just like common Mint, and they are of equal hardness and duration of life. Strong patches, or old-established plants of the variegated Mint will throw up shoots from two to three feet high; and in that state it looks well among low evergreens—as *Berberis*, *Daphne*, *Rhododendrons*, and so forth. Post-office orders for advertisements in THE COTTAGE GARDENER are to be taken out in the name of Mr. Angel, at the publishing office, 20, Paternoster Row, London.

J. N. C.—Your letter has been received. The volumes could be sent by "book post."

EVERGREEN FOR LATTICEWORK (J. W.).—Nothing will answer your purpose better than Ivy, with some plants of Virginian Creeper, treated as mentioned some time since by Mr. Beaton. This would give you crimson foliage in autumn, but you would lack the desired red berries in winter. The best thing for that purpose would be the evergreen Thorn, *Crataegus pyracantha*. Nothing can be more beautiful in winter. But, perhaps, it might not grow so fast as you would wish. Were we in your case, we should be disposed to plant the *pyracantha*,—say, six feet apart,—and fill in between with strong Ivy plants, in pots, or boxes, so that the roots did not interfere with the Thorn, and cut away the Ivy as the Thorn needed the room.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

DECEMBER 7th and 8th. NORTH DURHAM. Secs., R. C. Coulson, J. T. Duncan, and T. Wetherell. Entries close November 22nd.

DECEMBER 8th. WILTSHIRE. Sec., F. W. Phillips, Devizes. Entries close November 30th.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

DECEMBER 29th and 30th. BURNLEY AND EAST LANCASHIRE. Sec., Angus Sutherland. Entries close December 10th.

JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton. Entries close December 11th.

JANUARY 18th, 19th, and 20th. CHESTERFIELD AND SCARSDALE. Secs., W. M. Hewitt, and J. Charlesworth. Entries close January 4th.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakley.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Pitman, Esq.

N.B.—Secretaries will oblige us by sending early copies of their lists.

THE BIRMINGHAM POULTRY SHOW.

THIS was the tenth great annual Show. The poultry world is, indeed, indebted to Birmingham. Let us ask ourselves for what? It must be conceded to us, that this is the great parent of all Shows, and then we will rehearse some of the benefits it has conferred.

It has added to the food of the country; it has increased Dorkings, on an average, one pound weight per bird; it has added three pounds each to Geese, and one pound to Ducks. If this could be computed from correct statistics, the amount of extra food would be astonishing. It has greatly increased the number of eggs. But the greatest of all changes is the general improvement of poultry throughout the country. It is known to all those who frequent markets, that, whereas formerly a little dry, shabby fowl, was the only one that was to be had, now a good, fleshy, large bird is to be had at the same price. Thanks to this Show, poultry has been eaten during the last few years by people who never dreamt of it before. Wiser far than the Royal Agricultural Society, the Council of this Show has always clung to poultry, not as a proud poor man puts up with the society of a humble, but not common rich one, of whom he borrows money, but as a good useful friend and ally, and the connection has been mutually advantageous. The science and end of agriculture is, to provide food for the population; and let those who are disposed to look down on poultry, ask those conversant with the subject, what is the importation of eggs and poultry into England in a year? They will be astonished. But we see strange things in the world, and we believe there are those who, internally, still pray for protection from the foreigner in corn, and do all in their power to give him the poultry trade.

Not so Birmingham. The gentlemen who form the Council of this Show saw at once the importance of poultry, and they have no reason to regret the support they gave it. Their wits were kept bright by constant competition in everyday life, and they were fully aware, that, although a society may apparently prosper for a time on a narrow basis, yet it is only because it is carrying out certain experiments; and, when these are finished, its avocation is gone, its usefulness ended, and its exclusiveness becomes its ruin. While Birmingham gives every encouragement to cattle of all sorts, and to roots, and thereby holds out inducements to the agriculturist, she also offers a very liberal prize-list to poultry amateurs. This gives her a broad basis. Nothing identifies anyone with a show so much as to be an exhibitor, and hence it is, that any large agricultural show is deficient if it does not include poultry. There are thousands of amateurs who wish to exhibit, who like the little excitement and recreation of competition, but who—although they would cheerfully enter the arena with cattle of all sorts—are precluded—either by their calling, or the necessity for living in towns—from keeping them. But the pen of poultry causes them to become subscribers, and gives them an interest in the prosperity of the Society. The statistics prove they support it. The present is the largest entry since the promulgation of the new rules; and a casual glance at the list of the subscribers will show the ramifications poultry gives to the undertaking. If the system that was followed formerly—of allowing one person to exhibit as many pens as he pleased—still prevailed, it would be impossible either to guess at the number of pens, to provide room for them, or Judges to make the awards. In those days it was common for one exhibitor to send forty pens, and we could easily name those who were in the habit of doing it. Thus, the year 1853 produced 1,995 pens. This number showed the necessity of some check, and the Council wisely resolved to limit each subscriber to four pens. The 1,336 pens of this year show

a much larger number of competitors than the 1,995 of 1853; and the amount of sales—although the price of a pen, in many breeds, has fallen from £25 to £7 or £8—is nearly the same. A few years since, the great number was made up by the exhibition of hundreds of pens that were worthless, and had not the slightest chance in competition. Like the camp-followers of an army, they increased the number of mouths to feed without adding to the strength. Those who have known this great Show from the first, can recollect the strange mixture of combs and claws in the same pen,—the exhibition of many pens of chickens of the same sex. It was not an uncommon thing to see among Cochin chickens six pullets or six cocks. A pen of four Game fowls would show four different colours of legs. Hamburgs were continually shown with five claws; and hence, although the numbers were great, the competition was comparatively small, and the interest diminished, inasmuch as the superiority of the successful pens, in most instances, was plain to the most unpractised eye. It is very different now. The competition is so close, that visitors—although, perhaps, not to be classed among amateurs—are yet so interested in discovering the points wherein the successful differ from the less fortunate, that they become students, and the difficulty gives the study a charm it would not otherwise possess. The fact of a class being meritorious throughout is also the greatest proof of the utility of these exhibitions, inasmuch as it proves the first object—that of improvement—has been accomplished. It is also a homage paid to the wisdom and practical good sense of those who have guided this great Show through the various fortunes to its present eminence. Another proof, that the support they receive is not confined to a few persons, or to those who consider themselves pledged to exhibit at this Show, is, that the prizes are every year more and more scattered abroad. This was never more marked than at the display of which we now treat. The new names are numerous in every class, and testify to the growing interest taken in these Shows.

We will now speak of them as they occur. Twenty pens of adult *Spanish*. Many of them noble birds, but not sent in the high condition they were formerly. It is a great pity. No bird makes a better return for extra care and painstaking, than this; and a clean face brings out the contrast in colour, which is one of the chief beauties of the class. No one ever showed these birds in such perfection, as Mr. Davies, and we cannot help thinking, that the same care would still have the same results. They are fitted by colour and constitution to live in towns; and, if their legs and faces are well washed, the plumage will never show whether they live in fields or back-yards. In the absence of this care, they show to disadvantage. There was no other fault to find, and we offer this only as a suggestion. The four prize pens deserved all their honours, and those belonging to Mr. Brundrit were unusually meritorious. Had they not been, they would not have taken precedence of Mr. Fowler's, to whom defeat is a novelty. Mr. Busst's were excellent, as were Mrs. J. C. Hall's; but the latter were in sad condition.

Next came the class for two hens. Mr. Busst and Mr. Garlick were the heads over twenty-four pens. This was a good class.

Then thirty pens of *Spanish Chickens*. There was great work here, and their condition was beautiful. It was a very hard run between Messrs. Rodbard and Rake; but age told with the former, and he took the first prize. Messrs. Clewes and Moore had third and fourth. The quality of these birds augurs in favour of a strong class of adults next year.

We were disappointed in the number of entries for *Spanish Pullet*s. There were but eight competing pens. Mrs. Hall and Mr. Fowler had easy victories, with birds that would have stood well against greater competition. The cup for the best pen went to Mr. Brundrit's old birds.

The different classes of *Dorkings* produced 188 pens. It will soon be difficult to limit the weight of these birds. A few years since, a cock of 9 lbs. was a thing to be noted and talked about. There were now many of 10 lbs., and some weighed more. The hens and pullets have risen from 6 lbs. to 8 lbs. Of course, we do not speak of averages,—these are the exceptions: but it only proves what has been accomplished. Capt. Hornby took the first prize and silver cup with one of the best pens ever shown. Their condition was also admirable. The four birds weighed 35 lbs., without fat. An old and respected exhibitor, Mr. Smith, of Cropwell Butter, was second. A new name, Mr. Shaw, of Hunsbury, was third; and Mr. Ullock was fourth.

Captain Hornby was again first for *Dorking Chickens*. He

was here hard run by Mr. Wakefield, an old celebrity in this breed. Then came the Hon. W. W. Vernon, and Sir Henry Desvœux. There were twenty-seven commendations in these two classes, and every pen deserved a prize. We believe it is intended next year to increase the number of them.

The *Dorking Hens* afforded another triumph to Captain Hornby, followed by Mr. Berwick; and the *Pullets* earned a first for Sir H. Desvœux, and a second for the Rev. G. Hustler. There were twenty-one commendations in these classes, all richly deserved. With the exception of some overfat pens, the condition of all the Dorking classes was excellent.

White Dorkings are everywhere showing an increase of size, and they did not fail to do so on this occasion. Mr. Allsop held his position of first, in the adult class; while Captain Beardmore, as usual of late, took first and second for *Chickens*. This class is rapidly improving.

Again, in the *Buff* and *Cinnamon Cochin* classes, the old birds took the cup from the *Chickens*. We have had some experience in this breed, and we state most positively, we have never seen a cock so good and handsome as that in Mr. Tomlinson's pen. They were sold at £20, and they won a silver cup; yet, were we in his place, we should regret the loss of the cock. Mr. Fowler offered £15 for him. Mr. Stretch was obliged to be second. Two of the hens in Mr. Fowler's pen were almost as remarkable as Mr. Tomlinson's cock. Mr. Stretch was, however, first in *Chickens*, followed by Messrs. Fell and Peters.

The *Brown* and *Partridge* classes were numerous. The *Chickens* were probably increased by the fact, that there was a sweepstake of one guinea each to be awarded, independent of the prizes. We feel that our report is nothing unless we tell the truth; we are, therefore, bound to say, that more care must be exercised in selecting birds with faultless combs. There was difficulty in finding prize-pens such as were desired. In other respects this was a superior class of these birds.

The *White Cochin-Chinas* were very beautiful, and Mr. Chase's adults easily won the cup. It was a pen of remarkable beauty. Birmingham kept all the Cochin cups. We repeat, in all these classes, straight combs are indispensable; and there is a better prospect of success, even if the three birds do not quite match in other respects, if they have perfectly straight and upright combs, than if they are exactly similar, but have one distorted one among them.

The *Brahmas* were beautiful. Mr. Botham took both the first, and Mr. Teebay both the second prizes. These birds are long making their way; but they must do it, as their merits are of a sound and useful character.

We were very glad to see a revival of *Polands*, which were well represented in every class. Although many of the old names were successful,—Messrs. Dixon, Battye, and Ray, for *Black with White Crests*; Mrs. Pettat, Messrs. Dixon, Fox, and Greenall, in others,—still there were fresh names, and Col. Clowes headed both the *Silver* classes with beautiful birds.

The *Golden-pencilled Hamburgs* were excellent, and fully maintained the improvement we have noted of late. Both the first prizes and the cup remained at Birmingham. The breeders of the birds have succeeded in producing them most accurately and beautifully pencilled to the tips of the tails. The names of the commended will be proof of the excellence of these classes, and an assurance that all the great men competed.

The *Golden-spangled Hamburg* classes were good; but many of the old birds, especially the hens, did not seem to have recovered their moult. Mr. Chune was very successful, and won the cup. The things to be most avoided in these birds seem to be, overgrown and loose combs and black breasts. As a whole, we did not think this class as good as we have seen.

Mr. Archer took both the first prizes and the cup for the *Silver-pencilled*; and, after his career of success, it must be refreshing to this gentleman not to take the others. He seems to have a dangerous competitor in Mr. Keable, who took two prizes for *Chickens*. If we were exhibitors, we should hold the chicken-prize takers in especial dread.

The *Silver-spangled Hamburgs* were very good. Breeders in this class have gained perfect tails,—they are of faultless white, and accurately tipped; but this point is almost counterbalanced by loss of marking, both in quality and regularity, in hackle, body, and breast. The Rev. C. Pettat had the cup; Messrs. Archer and Pierce second; Mrs. Teebay and Mr. Dable third.

There are so many classes of the *Game*, that we are obliged to make one general mention of them, warned, as we are, that we

are exceeding our limits. The *Piles* were the weakest in point of number, but they were of excellent quality. Then came the great class—*Black-breasted and other Reds*. These were numerous indeed, and beautiful. The cup was deservedly awarded to Mr. G. Moss, for a beautiful pen. The first for *Chickens* went to Mr. Bradwell. These were two remarkable pens. Among the other prize-takers, we noticed particularly Captain Hornby and the Hon. W. W. Vernon; and among the highly commended there were numbers of the highest merit. As usual, the condition of these birds was beautiful. Almost every known name will be found among the nineteen commendations.

The *Duckwings* were very well represented; but we do not see any so carefully bred to colour as those that were formerly exhibited by Mr. Thurnall. The prize-takers well earned their distinction, and may be proud of it. We would give one word of advice here,—crooked and drooping combs are as objectionable as in *Cochins*.

Malays were stronger in quality than in numbers. Mr. Balance took two prizes, Mr. Attwater one (a first), and Mr. Fox a second.

The various class showed the usual varieties, and claimed seven prizes.

We have now to recommence our duties, by taking the *Single Cock* prizes. A new name, Mr. Moore, of Hanley Castle, took two out of three *Spanish* prizes. His first-prize bird was the perfection of the breed, and was faultless. In *Dorkings*, Mr. Robinson stood first, followed by Mr. Botham and the Rev. John Hill. Nothing could exceed the merits of these two classes, nor could competition be more severe. The *Cochins* were not so good, although they suffered only by comparison with their predecessors. The *Brahma Pootras* were very good. The *Polish* were weak. The *Golden-pencilled Hamburgs* were numerous and excellent. The *Golden-spangled* were still better; and some of the cocks shown here would have improved the competing pens in the earlier classes.

Two ladies, Mrs. Swift and Miss Emily Sutherland, headed the class for *Game Cocks*, followed by Mr. E. Archer. Then came the Sweepstakes for the same breed. Captain Hornby, Mr. Moss, and Mr. Sutherland divided them in order. These two were very highly meritorious classes.

And now the *Bantams* claimed the attention of the Judges. There was a hard struggle in the *Gold-laced*, between Mr. H. D. Bayly, Mr. Leno, and Mr. Punchard. It was decided they should stand as we have quoted them. This class has most decidedly improved.

The *Silvers* were also unusually good.

The first prize *White Bantams* were beautiful, and very small; but it would have improved the cock if his sickle feathers had been longer.

The two prize pens of *Black* were very handsome. They possessed the white ear-lobe, which is such an improvement to black birds.

As was expected, the *Game Bantam* class was very strong. The cup was awarded to the best pen of *Duckwings* we have yet seen. But they are capable of improvement, and are not yet as perfect in plumage as the other colours. They are the property of Mr. Swift. Twelve commendations in this class.

Mr. Fowler always takes the prizes for *Geese*, and he did so now, in both classes. No one has, however, succeeded as the Rev. John Robinson did some years since, in making *White* heavier than the coloured. Mr. Fowler's two first-prize pens weighed 57 lbs. and 71 lbs.; the second prizes, Mr. Mansfield's and Mr. Fowler's, 55 lbs. and 57 lbs.; the third, 54 lbs. and 54 lbs.

Mr. Weston's cup *Aylesbury Ducks* weighed 30 lbs.; Mrs. Leamans, second prize, 29½ lbs.; Mr. Fowler's, third, 29 lbs. It was an excellent class.

It was, however, surpassed by the *Rouens*. Not only were they numerous, but great pains have evidently been taken by the breeders, both to increase size and to obtain perfect feather. The first prize weighed 27 lbs.; the second, 26 lbs.; the third, 25 lbs. There were forty-two pens shown.

The Council of this Show has been long asked to give a separate class for *Buenos Ayreans*. The numbers shown among the varieties supported the application, and this was the first competition. *Eleven pens only were entered*. They were very good. The varieties were excellent.

We would particularly note the *Brown Call Ducks* of Mr. Dixon, and Lord Berwick's *Penguins*.

The *Turkeys* were good, but, save two or three pens, we have

seen them heavier. The three cup birds weighed 63 lbs.; and Lord Hill's *Americans* were beautiful in plumage.

This brings us to the end of our report. The sales were very numerous, and at good prices: 103 pens were sold during the first hour. Next week we shall be able to give more statistical information.

The Hall was crowded with nobility and gentry during the whole of Monday. We have only now a pleasing task, and imperative duty. If men should be especially honoured and thanked for great efforts, and considerable pecuniary liability, undertaken and incurred *only* for the comfort and enjoyment of their fellow creatures, then those who carry out this great annual exhibition deserve the warmest thanks for their unselfish and laborious exertions. It should never be forgotten, that they cannot, under any circumstances, reap any other reward than that of being instrumental in forwarding or increasing the pleasure and well-doing of others. They may well rank, then, as public benefactors. They do much for the cause of agriculture, in encouraging stock—including poultry—and roots. They give a large trade during the week to their town. They give employment to many. To some among their prize-takers in poultry, the amount gained is of consequence, and to many more the sale of their birds is a welcome assistance. They deserve the thanks, respect, and support of all who have to do with them, and we trust it will be tendered with a liberal hand. At less labour and expense, they might do many things in their town which would bring them prominently before others, and entitle them to public thanks. Let not these, then, lack the only reward they seek.

The JUDGES were—The Rev. R. Pulleine, G. J. Andrews, Esq., Mr. Baily, Mr. Hewitt, and Mr. Challoner.

Next week we shall give a list of the Commendations, the Prizes awarded to Pigeons, and supply some omissions.

CRYSTAL PALACE POULTRY SHOW.

WE remind our readers, that the entries for the above close on Saturday, the 11th of December. Like the great Show just passed, it has earned a good name for itself, for punctuality, impartiality, and strict attention to the interests and comfort of visitors and exhibitors. It is, in fact, our Metropolitan Show, and we trust—both in competition and attendance—it will be worthy of London.

OUR LETTER BOX.

DIRTY FOWL (J. T. L.).—Soap and water, as we have repeatedly directed, will clean the feathers of a fowl. After being washed it should be placed in a hamper on some clean hay or straw, in a warm room, until dry. Fantail Pigeons should not have crests.

COST OF POULTRY FEEDING (T. P. B.).—Your prices are too high. They are the highest retail prices. If you bought a sack of potatoes, they would, in most country places, cost little more than half what you state; damaged rice may be bought at 1d. per lb.; and the best grinding barley is only 3s. 6d. per bushel. We would undertake to supply the whole of the 28 lbs. of food named, for less than 2s. The only alteration we approve in the list, is substituting oats for barley in alternate weeks. The five hens and cock will not always require so much as 28 lbs. of food in seven days, and they should not be supplied at a time with more than they eat up clean. You take no account of the chickens in your calculation; and to expect to make hens pay by their eggs only, is to expect what has never yet been accomplished, if the food is bought.

VAGRANT FOWLS (An Old Subscriber).—A thin piece of lath tied across the back of each fowl, by bits of tape, first fixed to the lath, and then tied round each wing close to the body, will prevent the fowl flying. Cutting one wing will not injure a hen, nor prevent her laying.

BRAHMA POOTRAS (An Amateur).—They are only a variety of the Cochin-China, and not superior to any of the other varieties.

SPANISH COCKEREL WITH CROOKED BREAST (H. H.).—It is a fatal defect in an exhibition bird.

LONDON MARKETS.—DECEMBER 6.

POULTRY.

There is still a great supply of poultry, and a wretched trade. Wood-cocks and Snipes are not yet plentiful, especially the latter, which appear to be fast disappearing from England.

	Each.		Each.
Large Fowls	4s. 0d. to 4s. 6d.	Hares	2s. 0d. to 2s. 9d.
Small ditto.....	3 0 " 3 6	Partridges	0 9 " 1 3
Chickens.....	1 9 " 2 3	Grouse.....	2 0 " 0 0
Geese	6 0 " 7 6	Pigeons	0 7 " 0 8
Ducks	2 6 " 3 0	Rabbits	1 8 " 1 4
Pheasants	2 3 " 2 9	Wild ditto	0 8 " 0 9

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	DECEMBER 14—20, 1858.	WEATHER NEAR LONDON IN 1857.						Clock afterSun	Day of Year.		
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.		
14	TU	Epacris.	30.362—30.140	52—40	S.W.	—	1 af 8	49 af 3	11 af 0	9	5 7	348
15	W	EMBER WEEK.	30.123—30.071	50—45	S.W.	—	2 8	49 3	27 1	10	4 38	349
16	TH	Erica vestitatis.	30.078—30.034	54—45	S.W.	.10	3 8	49 3	48 2	11	4 9	350
17	F	Erica Patersonii.	30.131—30.089	57—48	S.	.04	4 8	49 3	14 4	12	3 40	351
18	S	Erica coccinea.	30.140—29.941	54—30	S.W.	.04	4 8	49 3	44 5	13	3 10	352
19	SUN	4 SUNDAY IN ADVENT.	30.182—30.042	48—23	S.W.	—	5 8	50 3	11 7	14	2 41	353
20	M	Erica Exsurgens.	29.989—29.786	50—40	S.W.	.07	6 8	50 3	rises.	⊗	2 11	354

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 42.1° and 30.6°, respectively. The greatest heat, 60°, occurred on the 19th, in 1848; and the lowest cold, 4°, on the 14th, in 1843. During the period 100 days were fine, and on 96 rain fell.

BRITAIN is justly proud of her gardening and her gardeners. Go where you will, *nowhere* on the face of the earth is the art practised so perfectly, and encouraged so munificently, and nowhere, as a profession, is it more respectably represented. The better class of practical gardeners are men of good education, and high attainments; they command a respectable position in society, and the social ladder is free to them. Lancelot Brown, who began life as a kitchen gardener to a gentleman near Woodstock, lived to amass a princely fortune by his abilities and industry, and in his old age to fill the office of High Sheriff of Huntingdon and Cambridge. In our own day, Sir Joseph Paxton, a practical gardener, sits as a senator for the administration of his country's affairs; and we could point to many other instances where the British gardener attains, not only to eminence in his profession, but to a high position in society. Such men are generally treated and spoken of with becoming respect; and particularly so after a long life spent in usefulness to others and honour to themselves. Unfortunately, however, there are men in the world whose feelings seem steeled to the appreciation of all merit or worth; and the merit or worth of those they sneeringly call "practical gardeners" is most offensive to them, and more to be hidden or deprecated, than to be commended and esteemed. Fortunately, such unhappy and miserable creatures are few; but our garden journalism is not free from them.

We had always thought, and the thousands who read this, doubtless, thought so too, that Mr. JOHN SMITH, the old and respected Curator of the Royal Botanic Garden, at Kew, was one of those men who, by his personal worth and high professional attainments, was far beyond the shaft of the malevolent and the envious. For a period of thirty-eight years he has held a creditable position in Kew Gardens, and for eighteen years of that period he has been their Curator. What Mr. Smith has done, all the world knows, and all the world has given him credit for it. But within the last week, a number of respectable practical gardeners have called our attention to a paragraph which appeared in a notice of the Royal Botanic Gardens, at Kew, published in the *Gardeners' Chronicle*, which, if not written by the Editor, goes forth to the world with his *imprimatur*, and reflects very much on the reputation of Mr. Smith. As public journalists, we feel ourselves called upon to denounce such an attempt, though an unsuccessful one, upon the professional character of such a man, and we

know that we shall be supported in doing so by the whole gardening community. The paragraph referred to is as follows:—

"In the cultivation of all this grand establishment, which we believe contains a greater extent of glass roofs than any other in the world, there is but one point open to reasonable criticism. We mean the condition of the Orchids. Of these plants very large quantities have been presented to the Garden from time to time; but the Curator, who is responsible for their management, has never known how to treat them. The consequence has been, that while these plants have been the pride of other places, at Kew they have formed a mere hospital where deaths were more frequent than recoveries, and healthy patients few. At this moment, although their number is still considerable, their condition is as unsatisfactory as ever. We know that this is a subject of extreme vexation to the Director, who has left no effort untried, and with the sanction of the Board spared no expense, to put an end to such an unsatisfactory state of things, by furnishing the Curator with the best assistance that can be procured. A 'practical gardener,' bringing with him the highest character for skill, and recommended by some of the best Orchid growers in England, was put in uncontrolled charge of the department which includes this collection some two years ago; but, although he performed some of his duties satisfactorily, it has been found necessary to remove him, the collection of Orchids having become worse than ever under his management. At present, the Orchids are in charge of Mr. John Keele, well known as a successful Orchid gardener with Mr. Butler, of Woolwich, and the plants are, undoubtedly, looking better than they did. But he has been too short a time in employment at Kew for any fixed opinion to be yet formed of his skill in this line. Meanwhile, we may remark, that we believe one radical fault has been a want of intelligent ventilation, so as to secure a free circulation of air. In fact, the plants have been parboiled, if the word may be admitted: the temperate and tropical species have been mixed together, and no period of rest has been allowed to any. Such management has, of course, borne the bitter fruit provided for it by nature."

Now, the attempt at disparagement is contained in the assertion, "that the Curator who is responsible for their management has never known how to treat them." Nobody who knows Mr. Smith believes that statement, but some who do not know him may believe it. It is wonderful to see the pains that have been taken to get up this charge of incompetency, and the accessories that have been pressed in to support it. We have, first of all, the gloomy and sad picture of "a mere hospital, where deaths were more frequent than recoveries, and healthy patients few." Then, "the extreme vexation to the Director," and the Curator furnished with "the best assistance that can be procured." How, with such a charnel-house of vegetable remains before his eyes, and with such valuable assistance at command, could Mr. Smith rest easy!

It may not be generally known, that in the Royal Botanic Garden there is a foreman for every department, responsible for the collection of which he has the charge,

and Mr. Smith takes the superintendence of the whole. These foremen are appointed, not by Mr. Smith, but by the Director. Let us see what was the "valuable assistance" Mr. Smith had in the Orchid department. We are told that "a practical gardener," bringing with him the highest character for skill," and so on, after being "put in *uncontrolled* charge of the department two years ago," had to be discharged because "the collection of Orchids became worse than ever under his management." So it was not Mr. Smith, after all, who killed the Orchids, but the "practical gardener" of the highest character for skill," and who had "the *uncontrolled* charge of the department." Another foreman is appointed, who knows his business better than his predecessor, "and the plants are undoubtedly looking better than they did." From which we infer, that if Mr. Smith had not been so unfortunate as to have the "practical gardener" of the highest character for skill and *uncontrolled charge*" muddling among his plants for two whole years, we should, in all probability, have seen the collection of Orchids as extensive and as luxuriant as it was a few years ago, when we used to admire it in the house now occupied with the Ferns. The fact is, and it is notorious, that, during the time that the "practical gardener" of the highest character," &c., was destroying the plants, Mr. Smith, time after time, remonstrated against the treatment pursued, and represented that nothing but failure would follow. However, the worthy had "uncontrolled charge," and he was allowed to have his way till it was too late, and then he was "removed."

The whole affair is a very pitiable instance of the extent to which illnature and want of discretion lead some men; and we can but feel very sorry for him who, by writing such a notice, has made but a sorry figure of himself. We leave him in the hands of the practical gardeners, who, we doubt not, will treat him and his essay as they deserve.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

ADVANTAGE should be taken of frosty mornings, to get manure wheeled into the quarters where it is wanted. All prunings of bush-fruit, shrubs, edgings of walks, and other such refuse, that is slow in the process of decomposition, to be collected into a heap and charred, when it will make an excellent dressing for land that has been long cropped with vegetables.

ASPARAGUS.—If a succession is required, dung, or dung and leaves, should be prepared for another bed.

CABBAGE.—Earth up while the weather is favourable for the purpose.

CARROTS.—Sow seed on a slight hotbed, if young ones are wanted very early.

CAULIFLOWERS.—Stir the surface of the soil amongst the plants, in frames, or under handlights, and sprinkle some dry, dusty soil amongst them, to prevent the green growth on its surface, which stagnant air, at this season, is apt to produce.

PEAS and BEANS.—If frost should appear likely to set in severely, draw a ridge of mould over those that are up, with a coat of clean sand over that, as a protection from the inclemency of the weather and from slugs.

RHUBARB and SEA-KALE.—Keep a supply, as advised in preceding weeks.

SPINACH.—When gathering, each leaf ought to be removed separately, as by grasping a handful, or even three or four leaves, at a time, the young and immature ones are frequently so torn, or bruised, as to prevent their further progress.

FRUIT GARDEN.

Continue to root-prune, where necessary, that a proper equilibrium may be established between the roots and branches, as the over-luxuriance of the branches will be counteracted by cutting the large roots. The winter pruning, after a careful system of summer management, will be merely confined to the removal of bits of dead wood, or the topping of branches. The nailing of wall, and the tying of espalier trees, to be finished as soon as possible, in favourable weather, to allow more time in the seed-sowing and busy months of spring.

ORCHARD TREES.—Prune, opening out the centre of each tree for the more free admission of light and air, cutting out all branches that cross the others, and all dead wood. When pruning, cut close and clean; and, if necessary, cut off large branches of trees that had been neglected for years (which it would have been much better to have avoided by timely attention). A coat of thick paint, brushed over the wounds, will exclude wet, and help to prevent their decay before the wounds get healed over.

FLOWER GARDEN.

AURICULAS, CAENATIONS, &c.—These plants, and other such florists' flowers, in pots, will require to be kept secure in very severe weather; but at all other times allow them to be fully exposed to the influence of the weather, to grow stiff and strong, and be thus enabled to withstand the vicissitudes of ordinary weather. As they are more apt to suffer from cold, cutting winds, than from a few degrees of frost, shelter or protection is then indispensable.

FUCHSIAS.—Cut down, and mulch over with short litter, any that are left in the beds or borders. If it is considered desirable to preserve any large specimens with their tops on, a circle should be formed with stakes stuck in the ground, tied together at the top, and covered with a mat; the interior being loosely stuffed with clean straw, or dry Ferns, &c., will be a sufficient protection. It will be well to pluck off the leaves, if any are on after the late frosts, as they encourage mouldiness.

PITS and FRAMES.—Give the plants a free circulation of air every clear, mild day, which will be of great service to them, after the dull, damp weather that we have lately experienced. Provide a quantity of dry litter, to be in readiness to place around them when severe weather sets in. It is also of great importance to keep the plants free from dead leaves, withered flower-stalks, weeds, and everything that would tend to produce damp and mouldiness. Any sort of which there is a short supply to propagate from, should be placed in growing quarters, kept near the glass, and free from insects, mildew, &c.; as soft-wooded plants, in heat, are very subject to the attacks of insects, which are more apt to injure them at this, than at any other season.

SHELBERRY.—The principal and choice plants in this department should be allowed sufficient space to display their natural habits or characters. Every tree, shrub, or plant, from the largest to the smallest, should have sufficient room to develop its natural form, without interfering with its neighbours.

WILLIAM KEANE.

MR. SALTER'S VERSAILLES NURSERY, HAMMERSMITH.

A REASON for anything, out of the common run, explains the thing better than a rule for doing it, or finding it out. If this had been a leap year, I might urge that for breaking my own rule of seeing the new Chrysanthemums,

themums, or for making it a rule for breaking through my yearly custom of seeing them a month earlier. But the reason for the thing rests on one point only. I wanted to kill three birds, this time, with the same stone. Far down in the country, the most valuable Chrysanthemums and Pompones are those which keep, or bloom, the latest. Up about London, seedlings of the current year are never thoroughly proved till the end of November, and, perhaps, not so early, or not till next year; and when the frost comes—and the shows are gone before that time—the degrees of strength in their constitution, and the degrees of skill which have been exhibited in judging them, in growing them, in showing them off, and in spelling their names properly, can be the more freely criticised, with less likelihood of swerving from the right, or leaning on the left foot. Therefore, by delaying my yearly call at the Versailles Nursery beyond the customary time, I was enabled to compass the three hits at one throw of the stone.

On my way there, I called at Kew and the Chiswick gardens, to see if all the leaves were swept up in the former, and to learn if anything was left in the distribution department of the latter, that I might order, on the strength of my F.H.S., for the Experimental Garden. That, also, was a part of my plan for being so late in the season; as it is part of my pride of life never to rummage granny's pockets till all my betters have had their full share;—this being, as I believe, the fourth time that I have had the pleasure of sharing in the dear old soul's distribution of the good things of her garden, for the last twenty years that I have enjoyed the privilege of one of her dearest offsets.

Both gardens looked as clean as a new pin. I heard that *Amherstia nobilis* had been struck from cuttings at Kew, but I did not go through the houses in either garden. At Chiswick, the trees and shrubs all over the garden are having their names put to them on wooden tallies,—a thing which ought never to have been neglected in a public garden. My favourite tree, *Acer Lobelli*, has not been cut down, which is lucky, as it is the finest deciduous tree in Europe to accompany architecture.

It was the first Saturday in December,—a dripping, dull, dreary day; and I fear Mr. Salter's hair stood on end as soon as he saw me, because I give him more bother about colours, shades, and changes, and about the meaning and right spelling of continental names, than all the rest of his customers put together, reckoning myself as one of them, on account of my being a troublesome customer.

The people in France and Italy, or some of them, are just as much puzzled with our names—after our household words—as ever we are about theirs, or their personal pronouns; and it is only fair to give them a turn, as they delight to read constant extracts from THE COTTAGE GARDENER. In Scotland, every woman, however humble she may be, if not married, is styled Miss. Miss Mary Bruce, scullery maid, Castle Grant, is exactly the way a girl there, in that line, would have her letters addressed. The rest of the Scotch titles are as in England, where any lady in the peerage is styled Mistress, if she hold the office of Mistress of the Robes to Her Majesty; and where all female servants, who have not been given in marriage, are also styled Mistress. A Duke or Lord is styled Master, if he holds one of several offices in the royal household, as Master of the Horse, for instance. With these exceptions, Master, Mistress, and Miss, mean the same in England as Monsieur, Madame, Ma-demoiselle do in France; or Signor, Signora, and Signorina in Italy; and Senor, Senora, and Senoretta in Spain. All nations are allowed to pronounce classical names according to the idiom of their own language, but not to alter the letters in the names, as Hermine for Hermione, which I instanced lately. A Frenchman is entitled to drop the s in Lais,—the name of one of the dark Pompones,—as if it were a French word; but he is not allowed

to write Lai, because Lais is an historical name in ancient history—the name of a beautiful woman, of whom the least said the soonest mended. The English word Misses is a provincialism, a short cut for Mistress. All this is Greek to some portion of our readers, and all of it is in reference to the names of florists' flowers only.

And here are the very flowers themselves. The most beautiful new Pompone, and the prettiest colour, to my eye, of all of them, when it turns to the winter shade, is called *Madame Miellez*.

I have a large open nosegay of all the new kinds, in water, on the table, and two vases and a glass full of them in other parts of my "keeping-room," as they would say in Suffolk, begged and borrowed of Mr. Salter, on purpose to learn all about them, in order that I might not put my foot in it—as some people lately have done—when I came to write about them.

The following Pompones were amongst the best in flower, old or new, indoors, at the beginning of December:—*Escarboucle*, the fine, large yellow, which was so conspicuous at the Crystal Palace, and which will last on till Christmas. *Virgine Miellez*, a large, hybrid, new Pompone, of a dark pinkish colour. *Mira*, newish, and the best late white kind. *Rosinante*, a hybrid, with a light peach, or blush, flower. *Boule de Neige*, a fine, late, snowball anemone. *Justine Tessier*, an older kind, sulphur white, and dying off a pure white. *Eugénie*, a new, rosy, blush hybrid. *Nanon*, the best late new yellow. *Reine de Panachas*, blush, with rosy stripes. *Baron d'Adswéard*, white, edged with cherry, very pretty,—to come out next spring. *Marmouset*, deeper and larger than the *Mignonette*, and a kind of anemone, without the guard petal, and the mouths of the florets fringed,—very pretty and quite new. *Créselle*, also fringed, and reddish yellow flowers. *Marionette*, a fine crome yellow. *Miss Talfourd*, mentioned from the Crystal Palace, and as fine as ever. *Madame Lealeuke*, quite new, and a new colour, a lively chestnut, very pretty and distinct. *Méléore*, a tasselled, light flower, with the tips of the florets marked with cherry,—a nice thing. *Mrs. Dix*—also mentioned from the Crystal Palace, and warranted the finest of the kind ever produced—is a white flower, with rosy edgings, and named after the lady of a Reverend gentleman near London. *Madame Ville Franche*, creamy white, with rosy edge, and a greenish yellow centre,—a very pretty mixture in one flower. *Signora Pépin*, a bronzy lilac, with a yellow centre,—a nice trim body this *Mrs. Pepin*, certainly. *Mrs. Astie*, a fine, yellow anemone, out last spring. *Perle*, a rosy, or blush, lilac anemone. *Madame Sentir*, a fine, pure white anemone. *Pasteur Kroh* (after the Protestant clergyman at Strasburg), rose, with a white centre,—the latest, in opening, of all the Pompones. *Jaune Marguerite*, a golden yellow, and as late as *Pasteur Kroh*. *Salomon*, the darkest violet (mentioned from the Crystal Palace), is still as fine as ever, and lighter in the centre. *Madame Miellez*, which is my first to-day, is, also, a very dark violet at first, and turns off to the most beautiful peachy flower ever seen out of doors. *Madame* is more like *Requiqui*, than *Salomon*, at first; but, when both of them are in their winter dress, they would pass in Madrid for *Senor* and *Senora* something; and if you could get a cross between them, and call it *Senoretta*, or *Miss Mille*, my word for it, you would have the *Perle du Prado* of the Spanish capital. As it is, however, *Salomon* and *Madame Miellez* cannot be matched in wedlock, or in beauty, on this side the Pyrenees. *Madame Fould*, which was the best this time last year, is still as fine as ever, and all but pure white now; in that stage she is a fit match with *Princesse Mathilde*, who is now as white as the driven snow. Every one of these were fit for staging in a Queen's conservatory, and most of them will hold on to the new year.

As a proof of the increased interest in these most useful flowers, I may state, that Mr. Salter sold four times more

of them last season and this autumn, than he had ever done before in one year. *Progne*, the one I mentioned this time last year, as coming the nearest to a crimson scarlet, sold better than any one of the 800 kinds which Mr. Salter grows; for he sold himself right out of it, and had to buy it back again, to have another turn with it next year. *Prince Albert* is destined to run the same race, many hundreds of it being ordered already.

To be able to write correctly on florists' flowers, it is essential to see and study the new seedlings, year by year; and it is more so with Chrysanthemums and Pompones than any other class. See how Dr. Lindley has been hampered with them. He constantly pretends to know nothing about florists' flowers when he is asked about them, and yet writes as if he understood them properly. Any blackleg can impose on him—and, through him, on the Horticultural Society—with Chrysanthemums. As a proof of this, I found out, in Mr. Salter's collection, the names of two old things, which were entered as new kinds in the prize collections at St. James's Hall,—I mean *Stoke Newington Beauty*, which is the dear old *Duchesse de Montebello*, and *Lord Raglan*, which is the same as *Insigne* of twenty years back: this is the kind of which "I could not mind the name on him." Such plants, getting into the reports of the Horticultural Society as new kinds, will be bought as such. But I am all but certain that I discovered the only seedling which was entered in the Hall as such—the yellow, or golden, *Cedo Nulli*, of which six beautiful little plants were in St. James's Hall. The frost had struck them so much, out of doors, at the Versailles Nursery, that I shall not be quite positive about finding the new *Cedo* under its original name. But I will stake my cash and credit, and every farthing I possess in this world on the issue, that the plant called *Yellow Cedo Nulli*, and which had a prize, as a seedling, from the Horticultural Society, was, and is, no more a new seedling, than I am an old seedling from a Scotch thistle; and I do hereby challenge the East and West Enders to prove the contrary. If I lose all my money, I shall go to the workhouse, sooner than attempt to raise the wind by dishonesty, or by imposing upon a poor old and infirm woman, like the Horticultural Society, who has not a firm leg to stand on. But a pinch of Scotch snuff, like this, can do the poor soul no harm—I am often revived, in my old age, by a good pinch of the kind. After all, however, nothing is so good for old people, at Christmas, as beautiful flowers,—such as those in my "keeping-room," and the names of which—old, new, and middling—I give, as noted in going over Mr. Salter's winter garden, which was arranged this season on the flower-garden system, and looked remarkably gay and refreshing. The most conspicuous, and the freshest in the house, and also the largest, was *Madame Guillaume*: she is a Madame, and no mistake, and the nearest to liken her to is *Christine*. *L'Emir* is as good as it was a month back. *Virgine*, a fine, new, pure white, *Arigena*, a better-coloured amaranth than earlier in the season. *Prince of Wales*, a fiery red; also a better colour than earlier in the season. *Auguste Mie*, equally good. *Rolla*, much more silvery than earlier. *George Sand*, a very showy anemone. *Morceau*, rose-tipped white. *Annie Salter*, *Madame Cameron*, and *Christine*, all just as good as a month back. *Louis Bonamie*, a splendid, new, rosy-lilac anemone. *Beauté du Nord*, deep purple now. *Anexo*, *Pilate*, *Alfred Salter*, improve as the season gets later. *King of Anemones*, a very late kind. *Duc de Condé*, lilac, with white centre,—fine. *Madame Clos*, rosy carmine. *Mount Vesuvius*, in the way of *Mount Etna*, but three times its size,—a noble subject for the hair-dressers. *Reine Bacchanal*, reddish claret colour. *Sulphurea superba*, another glorious turn for the dressers. Several of these, in crinoline, would exceed the size of *Themis*. *Globe*, a pure white,—another fine thing. *Madame Leo*, a still larger pure white,—equally fine. *Brilliant*, the best yellow in the house, and quite new. *Golconda*,

golden yellow,—fine for dressing. *Progne*, the nearest to, and best crimson, and better when bleached a little by time. *Julie la Grancire*, or some such spelling, for my ribs were so nearly bursting, that I blotted the name, which came so near to granny, and granny so dear to me, and the flower being so large, and so like my own dear grandmother's nightcaps, I could stand it no longer. But to make sure of it, the best way would be to write to Mr. Salter, next spring, for a plant of it,—he will recollect it as long as he lives: the colour and style of it are in the way of *Bob*, and the flower about three times the size of that of *Bob*. *Glory* is another large, new, pale lilac. *Prince Albert*, the largest and best of all the dark kinds; and the *Golden Queen of England*;—were preserved along with most of those which were exhibited at the Crystal Palace, in September, by an accident which may be turned to good account. The cut flowers were put into a close packing-case, which case was put away in a dark place; and when it was opened, two months after that, most of the flowers were as fresh as ever, and that on the 4th of December!

I saw some of the very flowers which I described from the Crystal Palace Show; and this reminds me, that a gentleman told me there, that he was in the habit of having cut Pompones for his rooms and glasses, from Christmas to the end of January, by cutting the shoot when the first flower-bud was ready to open, at different times, from the middle of October to the end of November. These cut shoots are then stripped of their leaves, and stuck in wet sand, and put down in a dark, dry cellar. When they are taken to the drawing-room, they open in two or three days, and look as well as if they bloomed on the plants. *Prince Albert* is an English seedling, which Mr. Salter bought from the lucky raiser. The *Golden Queen of England* is a lucky sport of his own; and, as a matter of historical interest, I must name that somebody had told Mr. Salter, that somebody else had a golden yellow seedling, which would beat the globe, and all on it. But, being more up to the mark than Dr. Lindley, he will not always believe what they say. He said, if anything on this globe could beat his *Golden Queen of England*, he should like to see it, and he did see it, and so did I: one cut flower which he had on exhibition I knew in a moment, and it must be twenty-eight if not thirty years since I last saw a flower of the same kind. Mr. Salter knew it, of course. It is a Chinese seedling, which was introduced by the Horticultural Society, time out of mind, and by them called the *Golden Lotus*. Well, the *Golden Lotus*, like the golden *Cedo Nulli*, could be passed off as a new seedling the other day before the Horticultural Society, as sure as my name is

D. BEATON.

P.S.—Mr. Salter bought the last plant of the *Golden Lotus*, and he will sell it next spring to any of us, but not as a new seedling.

THE PRINCIPLES OF WINTER PRUNING FRUITS.

No doubt the pruning season has, with some, already commenced. It is necessary with inexperienced persons to go somewhat into detail, as to special cases. Yet, as a pioneer in such matters, I think I may possibly gratify some of the readers of THE COTTAGE GARDENER, by showing as a prelude, that there are some general principles of pruning common to almost all our fruits. This will, at least, form a basis on which to ground future details of a special character. Those who have watched the course of THE COTTAGE GARDENER from its commencement, are, doubtless, aware, that its grand design was to be eminently practical; at the same time studiously anxious to avoid that kind of vulgarity which affects to despise all science. Of the latter, there has

been no lack; although that very plain mode of writing, which has been the usage of the contributors, may have led some minds to suppose that they are mere men of rules. But it is with some writers, as with some men in their conversation,—they do not choose to parade all they know of nature's secrets at once, for mere display, but continue, almost unnoticed, to weave their highest amount of knowledge into plain, everyday facts of a practical character. He who would teach the unknowing, or the young, must not get on a pedestal, but rather descend to a level where everybody may see and hear him without feeling offence. There does not, indeed, seem much of pruning in all this, unless pruning misconceptions; but we will come to the knife itself. In pursuance, then, of my text, let me endeavour to throw the matter into shape, so as to render it more tangible. I may, at least, offer the six following points for consideration:—

1st. Winter pruning is a practice well known to promote the permanent welfare of the tree, and to add to the welfare of the fruit.

2nd. It is used to facilitate the admission of those two needful elements, light and air.

3rd. To prevent an undue appropriation of the sap.

4th. To facilitate the development of spurs.

5th. To relieve spurs of needless wood.

6th. To excite to more rapid growth.

A few remarks on these points consecutively, will, I hope, make the matter clearer. I will not repeat the points, for fear of tediousness. Those who feel interested in the matter can just refer to the numbers.

First. We all know that when fruit trees are left to themselves, unpruned, in proportion as they are neglected, the fruit becomes of less value. And herein, together with other cultural arts, arises the great superiority of cultivated fruits over those which are wild. It also promotes the general health of the trees, by a more equal distribution of the sap, and by removing all decaying, or corrupt, portions, which, in all trees and plants, are apt to injure contiguous parts, or to have a tendency to corrupt the system. Hence, it becomes necessary, even with the most common orchard trees, to look over them, at least every second year, to remove decaying portions, and some of that unimportant wood which chokes the interior of the tree.

Second. The course of practice suggested in No. 1, has, of course, a tendency to promote the admission of light and air in the common orchard tree; but the fancy trained, and more tender fruits of our kitchen gardens, require something more. The condition under which they are placed requires that much of the mere annual spray, commonly termed breastwood, be removed, and that for various reasons. Without a free admission of light and air, the interior portions assume what is called a drawn character; and the fruit produced from such wood is, compared with those from the exterior, small, pale, and flavourless.

Third. Judicious pruning prevents an undue appropriation of sap by any given portion, or portions, of the trees. Thus, we may frequently find trees, which have been neglected, growing much to one side, and one or more branches producing fruits superior to the others. We may, also, find gross and rampant shoots produced here and there, some occasionally towards the lower portion of the trees. These divert the sap to their own use, and rob the superior portions of the tree. The removal of these, and the pruning back occasionally of the prouder portions, promotes equality, and sustains a proper balance in the system.

Fourth. Several of our fruits bear principally on spurs, and pruning, or rather shortening, is had recourse to, in order to cause those spurs to be produced with greater regularity. How often do we see Apple and Pear trees with long portions of the stem, at intervals, totally devoid of spurs, or, indeed, any development. And why is

this? Simply because they had been over-excited at the root during the first three or four years after planting, and produced young shoots of inordinate length; and these not being sufficiently pruned back, the lower portion of every season's growth became naked, a few of the more powerful side-shoots taking the lead and maintaining it.

Fifth. The spurs of many of our fruits produce wood-shoots amongst, or near, the spurs. These have to be pruned away at the winter operations.

Sixth. Pruning in the rest season, to excite to a more rapid growth, is a very common practice, and much resorted to by nurserymen. It chiefly consists in pruning back, to a very few eyes, shoots possessing some character as to growth. The true basis of this proceeding seems to be, to cause a great disparity, or disproportion, between the roots and the branches: the former, in such cases, sends up more fluids than can at once be appropriated or employed. The necessary consequence of this is, that when once the new growth is burst forth, they do so with extra power: more capacious sap vessels is the result, and the probability is, that the tree will ultimately grow to a larger size than if left unassisted. But this is not the aim of those who have a few pet trees, and, perhaps, a favourite or two in an unsatisfactory condition. The nurseryman thus excites to growth to make his tree look saleable. He wants orders. You want to see your pet in a condition to bear fruit, and to have a tolerably permanent constitution. Many of what are termed stunted and hide-bound fruit trees, may be thus relieved, especially if a couple of barrows of really good rotten manure be given them, and, if you like, a little liquid manure just before Midsummer.

I have now done with my points, as assumed, and, in conclusion, beg to offer a little wholesome advice as corollary to the aforesaid. There can be no doubt, that many of the complaints we hear, of the premature decay of orchards, arises from the neglect of pruning. Such neglect not only progressively deteriorates the character and value of the fruit, but hastens the decay of the tree, either in portions, or as affecting the whole system and constitution of the trees. As for the fruit, of what value is a full crop in appearance, when not above one-fourth are fit for the fruiterer's stall? To be sure, they may do for cider-crushers; but we may not confine our views to this narrow ground. One great misfortune with such neglected trees is, that being half suffocated with wood, they occasionally set their fruit through the interior of the trees, as well as at the extremities of the branches. Such overcropping, although sometimes of service to young and gross trees, becomes a great evil in trees of age, and much exhausted by former crops. The fruits in the interior are worthless, and yet they draw heavily on the resources of the trees; and the evil does not end here,—such fruit will never keep well: they are the first to become spotted, and to shrivel, and no wonder,—they have not been well fed.

Of course, our readers must learn to distinguish well between the rough pruning of orchard trees, and the dainty pruning of espaliers and trained trees in kitchen gardens. The latter is a proceeding distinct from the other, albeit they possess certain principles in common. Of course, this is not the place to go into the whole subject in detail,—that may follow after. Whilst on the subject of orchard trees, let me observe, that wherever wood of some thickness is cut, or sawed, it is most essential that the cuts be run over with the knife afterwards, and polished, so as to prevent the absorption of moisture. Indeed, it would be well, with trees worthy of consideration, to rub a little dressing on the wounds: clay, cowdung, and lime, well mixed, are very good for this purpose. It is of much importance to keep out both moisture and air.

I trust that these remarks may tend to convince those

readers of THE COTTAGE GARDENER, who have not appreciated the subject, that winter pruning is of importance to all fruit trees. As for our trained trees in gardens, if they are well handled in summer, they need little in winter; but our orchard trees cannot possibly receive that attention.

R. ERRINGTON.

LITTLE THINGS.

"WELL, there now, I have just been having it again. I suppose I must make up my mind, and get another shop, where my talents will be better appreciated,—I see no hope of anything like comfort here. I should not mind being told of faults, or shortcomings, of any importance;—but this carping about the veriest trifles; this magnifying of moleheap nothings into mountains of importance; this proverbing about *can* do when there is a *will* do; these hints about procrastinating, when I only put off from day to day what I might easily have done twenty times over, had I considered the doing it at a set time of any importance; this pointing to pots under-watered and over-watered, and to yellow leaves merely thrown on the floor, instead of being clapped in my apron, as if I could not clear all up in a few minutes; this telling me to look at dampers-out, and at furnace ashpit doors open after the fire had burned bright, and at the small heap of ashes and cinders in front of the ashpit doors, just as if I was a downright waster, and had more intention to heat the air of the village, than the flue, or water pipes of the house, and cared but little if the whole place was burnt down, &c.;—these are the things I find I cannot stomach. Let others do it, if they will!"—*Young gardeners, in bothies, rooms, and lodgings.*

"There it is again, those confounded trifles;—a broom left lying in a place for several days, suggesting that brooms must cost nothing here; a scraper not put up at a desired spot, though there was to be no hurry about it; a plant standing at the drawing-room door, with yellow leaves and fading flowers, which might have been soon changed, had I only thought of it; a few largish weeds in a quarter, a reason for saying satirically, that gardening must be a very profitable affair; or, when a few weeds are seen on a walk, saying plainly, that it was not generally supposed that gravel walks were meant to be a close imitation of a grass lawn;—mentioning that certain plants, in a prominent place, wanted tying up or removing, though I had known that for days, and intended doing it the first time I went that way; that it was thought some group of flower-beds near the window, which looked so well a fortnight ago, wanted a little arranging or dressing, as I had not looked at them since; that the Cabbage and Cauliflower sent in might be very good, but they wanted a change, though I had been told they would never weary of them; that they would like fruit more continuously, and not such quantities at one time,—just as if I intended to starve and surfeit, in turns; that in future it would be desirable that the cut flowers for the glasses should embrace more variety of colours, and that if pots were put in the house at all, they should be small, so that it would be easy to arrange such flowering plants in baskets and vases more artistically,—thus conveying the insinuation that such matters had been previously neglected; that the flower groups of which I had asked opinion were stated to be showy, though a different arrangement would have been preferred,—just as if I were deficient in all knowledge of colours, and the true principles of taste, &c. Heigho!—what next, I wonder! Find fault with my general management, if they could, and I would know how to meet it, or bear it;—but this obtruding of trifles, the very essence of littlenesses,—and giving them such distinction, as if they were really important,—would wear out the patience of a Job, and worries and embitters my very existence.

I suppose I must cut it!"—*From unpublished soliloquies of head gardeners.*

Much of the discomfort and wretchedness of mankind generally, and of gardeners in particular, arises from the contempt or neglect of the *littles*. As respects comfort and utility, a great object would be gained, did we only get into the habit of looking upon every *little* as either inherently, or from association or combination, truly great and important. What seems less important than a pearly drop of water, and yet that continuously dropping will wear away the hardest rock. Combine vast numbers of these drops, and the river or ocean is formed. From such myriads of mote particles of matter as float in the sunbeam, huge continents are constituted. The hempen thread is small, but from it and its neighbours are manufactured the huge cables at Devonport. The locust is but a small animal; but bring an army of them over a fair landscape, and no other array of destroyers and plunderers could leave such a wilderness of desolation in its track. Both the thrip and the acarus, or red spider, are so small, as to require good and young eyes to detect them clearly; the greenfly is much larger, and plumper, but little, after all, so far as mere contrast with larger insects and animals is concerned; yet what harm can be done by a few such insignificant insects.

"We have seen a few of them, certainly; we will watch and look now and then, and notice if they increase or decrease. If we must wash, or sulphur vapour, or smoke with tobacco, let us have enemies to destroy worthy of our prowess and our labour." So speak, or at least act, the contemners of the *littles*. Taken when the first insect was seen, one effort to destroy them might have been sufficient, and without doing injury to the plant on which they were living. But leave them alone for a day, or a week; keep congratulating yourself that there are not such a vast number of them yet; resolve, and re-resolve, that erelong you will do for them; meanwhile, let them increase by hundreds of generations, and by securely depositing myriads of eggs, whilst all the time drawing the lifeblood from the plants; and then, when you have attacked them time after time, and find a new generation, hydra-like, to battle with, as soon as an elder race is destroyed,—you may ultimately have reason to congratulate yourself on the wisdom, the prudence, and the economy which led you to waste so much time, material, and labour, which could have been mostly saved by taking such insect-plastered plants, after waiting so long, at once to the rubbish-heap, or rather to the inside of a furnace.

But, the contempt of the *little* does not end, as in the above case, in bringing into full-blown development the mere procrastinating impulses to which we are so ready to listen; but, if at all persevered in, will give a tone and a marking to our field of thought and of action. Be careless of *trifles* to-day, be quite above considering the *littles* to-day, and that carelessness in a week will cling to you like a cloak of *habit*, and become as compactly bound around you, as your skin, in the shape of character, in a month or a year. Hence, a wise man, when he wishes to know the distinguishing characteristics of a stranger, seeks for these characteristics not in one brilliant circumstance, but in the events of retired domestic life. It is not more true, that good gardening is just attention to the *littles*, than it is true, that these littles alike form and demonstrate character. The man known among his neighbours for a uniform close-fisted, selfish penuriousness, will not rise above that undesirable character, though once or twice in his life, under the influence of a strong stimulus, he may have been induced to perform a liberal benevolent action, an action which even the unlettered peasant can easily see to be not in unison with, but abhorrent and opposed to, his general conduct. Who, carrying out the dictates of practical wisdom, would think of appointing a man to the charge of some great interests, if he had previously found him inattentive

to the lesser interests committed to him? Many a young gardener hopefully looks forward to the time when he will manage so well, and not be troubled with trifles. He would be surer of success, if he formed a sound foundation by a thorough understanding of, and an attention to *littles* now.

I have known some head gardeners who never cared about getting a fresh assistant under them, if they had not previously seen him at work, just in the usual routine of everyday employment. They, from seeming little things, judged of a man's general habits. I know one, otherwise estimable young man, who lost, without knowing it, a first-rate foreman's place, because, in setting small pots on a shelf and platform, by the side of a straight walk, the pots stood every way but in a straight line. He was at once considered defective in order and system. Another was judged to have no knowledge of economy, or the value of fuel, because the dampers and ash-pits to his furnaces were both standing open, when they ought to be shut. "We cannot afford to heat, and then cool the fire and the boiler, by throwing as much cold air as possible over the embers from both above and below." A third was pronounced a thorough sloven, because he allowed a heap of ashes to be at his ash-pit door, and did not switch with a scrub broom the floor and steps of the stoke-hole, and even then have a wipe of bound straw, or evergreen branches, to prevent his feet carrying marks of ashes over the gravel. "Besides the impossibility of tolerating such slovenliness, and the vast trouble and unpleasantness of breaking habits, of which this, like the feather on a windy day, is only symptomatic of the bias of character, I would be afraid to sleep in frosty and windy nights, for dread of a conflagration." A fourth was passed over as either too ignorant, or, what was inestimably worse, too careless to mingle thinking with his working, because in a sunny but keen frosty day, while keeping the top lights of his greenhouse shut, he opened the front ones liberally, thus allowing the cold, dry air at once to strike upon his plants; whilst, if admitted at the top, it would have been softened by passing through the warmest and moistest air of the house, as it escaped.

I need not enlarge on procrastinating sowing, thinning, potting; of careless watering; on wasting time and shoe-leather; in making set jobs of what ought to be done in passing; of having a day to pick off yellow leaves, when removed in passing, or in watering, as soon as seen, there would never be, at one time, any such disfigurements; and many other similar matters. My purpose will be gained, if young men will be convinced that these matters are keenly noted by their older brethren, and that attention to the *littles* is of such primary importance, that if, without it—though that is not very likely—they may obtain a good situation, there will be great odds against either keeping it, or being honoured and respected in it. I speak thus freely, but kindly and feelingly, because if there is one thing, that, as a gardener, I regret more than another, it is, that, when younger, I did not pay sufficient attention to the *littles*, as the true groundwork for future successful practice.

I find I have not space now, nor, indeed, do I feel willing to enter upon the grumblings of head gardeners, because their employers remind them at times of some of these *littles*. Every man would be a Pope if he could; and gardeners, as a class, dearly like to have their own way. It is always best, if it could be so managed, to anticipate such hints and desires, and thus prevent the expressing of them. When such hints are expressed, it is comparatively seldom they are given in the way of carping fault-finding. They are just mentioned in passing, and are seldom more thought of, unless they are again foolishly and paradingly obtruded. Some people, in order that they may work themselves up into being offended, will prefer looking through a pair of yellow, jaundiced spectacles, instead of using their own sober

reason, and good eyesight. Much of this narrow-minded touchiness would be thoroughly dispelled, did we constantly keep before us the fact, that, as servants, it is our duty and our interest, to serve our employers just as they wished to be served, by studying and supplying, as far as possible, their peculiar desires and wants. Almost every gardener has his favourite hobby; but if he is wise, he will make that succumb to the hobby of those who pay him. Allusion to these *littles* will often enable him to see in what their peculiar likes and dislikes consist. True, these may often show a great change in taste; but we all change, and we all like change. There is in this nothing to complain about, if due time and convenience are given for effecting the change. When this is not the case, there is ground for expostulation. For instance, a gentleman told his gardener, that he was sick of the look of Cucumbers, to grow none next season, unless upon the open ridge; and then, a fortnight before Easter, hoped he would have plenty of Cucumbers by Good Friday. A clear, defined arrangement should be thoroughly understood in all such implied changes. A mere passing allusion, to being sick, or tired, of a certain article, should generally be taken as a hint not to grow so much of it, not to send it so often to table, rather than as relinquishing its growth altogether. Praising up something else, should not lead us to send it to table every day, or even that will prove insipid to the taste, and tiring to the eye. Man, and every other animal, like, and thrive upon change of food. I have known instances, in which gentlemen so often spoke of Cauliflower being the best flower in the garden, and the best vegetable too, and, as a consequence, were so well supplied by the gardener, that the whole family would be so tired of it, as to send it untasted from the table, even in the winter months, when, otherwise, it would then have been looked upon as a costly delicacy. Could the gardener have cause for annoyance, when desired to grow less Cauliflower in future? Another gardener was desired not to send in forced Strawberries, unless there should, at least, be one fruit for every one at table; and he resolutely sent no more for weeks, until he could send a heaped peck basketful. Need we wonder, that sensible men blamed him for his folly and thick-headed obstinacy. His otherwise good talents were neutralised by his contempt of the *littles*, even in courtesy. There are, no doubt, employers, whom the most attentive and obliging would find it impossible long to serve; for the causes of mutual dissatisfaction are anything but always to be found with the servant; but when part, at least, of these causes can be honestly laid to his charge, it will generally, as a rule, be found, that the unpleasant results are less owing to want of knowledge, want of attention, and want of untiring industry, than to the want of giving due prominence to those little matters on which an employer places a value. These trifling omissions are ever obtruded, and from these he is, perhaps, too apt to judge of the general conduct. He rightly considers, that, in all things lawful, his will ought to be the rule of action.

In one concluding word, we would say to our young friends, that they may rest assured, that if they do not master the *littles*, they will be mastered and controlled by them.

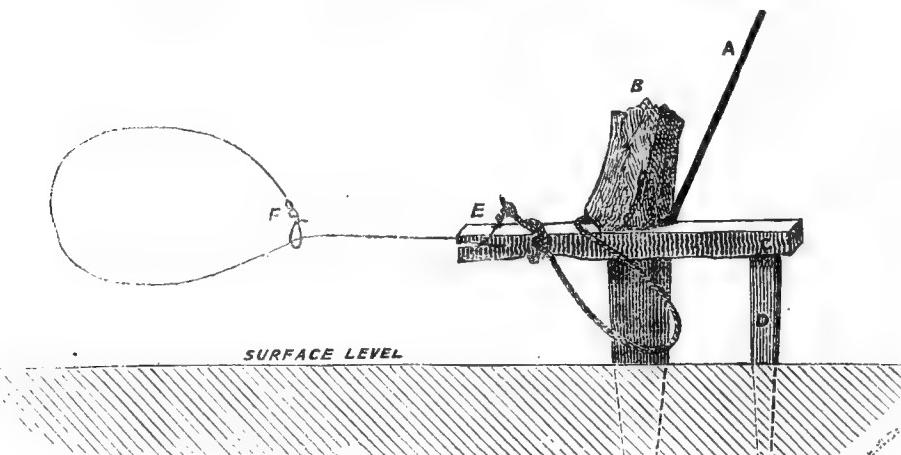
R. FISH.

GLASS FIXTURES.

YOUR correspondent, the "REV. F. E. ROBINSON," does not appear to be aware, that the Queen's Bench has decided, in the case of *Martin and another v. Roe*, that glass houses, not being essential to rectory and parsonage houses, erected on the glebe by an incumbent, may be removed by him, or his executors, though "attached to the freehold;" and are not subject to a claim for dilapidations.—B. W. VAUDREY.

[The case is reported in the *Law Times*, vol. xxviii., p. 283, and we gave a still fuller report of the case in our No. 439, p. 350.—EDS.]

A CHEAP AND MOST EFFECTUAL RAT-TRAP.



- A. String, twelve inches long.
 B. Stout hooked peg, five inches long.
 C. Bridge peg, two inches and a half long.

Seven inches from D. to end of noose, as above.

- D. Slight prop peg, three inches and a half long.
 E. Slit, for rat wire to rest in.
 F. Noose of wire, of oval shape, two inches long, by one inch deep.

I HAVE derived so many valuable hints from your excellent serial, from time to time, that I am induced to contribute thereto a description of my gardener's ingenious yet simple rat-trap, with a sketch thereof, which, however, your draughtsman will improve, after seeing the several parts, sent herewith, fixed in the ground, agreeably to the following directions—viz.: Take a Hazel twig, eleven feet long; fix one end firmly into the ground; then bend it down, and affix to the other end (nicked to secure the same) a piece of string a foot long (A), which tie to the bridge-peg (C), leaving the end free; and to this end attach the rat-wire and noose F, which is then passed through the slit E, and from its stiffness can be carried out, as a running noose, in the manner indicated in the diagram,—this wire being placed horizontally at right angles to the Hazel twig, at the height of an inch from the surface, and right across the run of the rat, stoat,

or weasel. The action of the trap is this:—the rat runs himself into the noose F, which closes on its neck immediately; and the wire being disengaged at once from the slit E, in one direction or the other, the rat is jerked into the air by the bent twig; and there remains suspended securely, dead or alive, according to the time it has continued so strangled. With this efficacious trap, my gardener, Mr. John Crisp, has caught eight rats in three hours time! My neighbours, hereabouts, are infested with rats equally with myself, and pay 3d. a-head for all that are killed. Such of your readers, therefore, as are troubled with this vermin, if not able, from this description of mine, and the sketch accompanying it, to make this trap, can procure, per post (pre-paid), the several parts thereof (the twig not included, of course), by enclosing Mr. J. Crisp a shilling's worth of stamps, with their address in full.—H. E. AUSTEN, Lieut.-Col., *The Pavilion, Aldweek, Bognor.*

THE WINTER GARDEN.

THE readers of THE COTTAGE GARDENER may remember, that some time ago I described the mode in which the flower-beds at Moor Park, the seat of the Right Hon. Lord Grosvenor, were planted in winter by Mr. Sparrow, the gardener, with dwarf evergreen shrubs, with the happiest effect. I remarked at the time, that beds so furnished were interesting, and infinitely superior to bare, naked beds, or even such as had small branches of evergreens stuck in them. It is true, when the family departs to London, or elsewhere, about the time the summer flowers are over, it is of less consequence; and, perhaps, the labour and expense of forming a winter flower garden may be dispensed with.

I am much pleased, however, that the practice is on the increase. On the 18th of last month I had to visit the gardens belonging to Archibald Hawkesley, Esq., The Dell, on the borders of the great forest, Windsor, where Mr. S. Smith is the gardener. Here I found a large flower garden converted into a winter garden, every bed being thickly covered with low evergreen shrubs, or evergreen herbaceous flowers.

I also called, the same day, at Cooper's Hill, the seat of Sir John Cathcart, Bart., about a mile from The Dell, and found Mr. Dodds had planted his flower-beds in a similar style, though slightly different. Below is a list of the plants used at The Dell for this purpose, which list may be useful to anyone desirous of imitating such a practice. I should have been glad of a sketch of each garden, to show the exact position of each kind; but I could spare no time to take such a sketch. It may suffice, perhaps, to say, that each bed was filled with one kind of shrub, or plant, so as to form a dense mass.

In the gardens of the first-mentioned place (The Dell),

I noticed a rather extraordinary shrub, or small tree: it was a double, white, Camellia. The gardener stated,—and truly, too, in my opinion,—that it is one of the finest of its kind in the country. It grows against a south-east wall, untrained, and without any protection; blooms every season the astounding number of upwards of 5,000 flowers; and is in the most luxuriant health imaginable: it is fifteen feet high, and ten broad. Also, an equally large *Magnolia conspicua*, which blooms quite as freely, and which is extremely free of growth. This place has been greatly improved—in fact, almost entirely re-made—within the last two years. I was shown a *Taxodium sempervirens*, upwards of twenty feet high, that had been brought from a nursery, last year, twelve miles off, which, I saw, was thriving as well as if it had never been moved. Also, many other Coniferæ, almost as large, especially a Chinese Arbor vitæ, all growing remarkably well, showing that, with moderate care, trees of a large size may be safely transplanted. In the vineeries, there are some very old Vines. The houses have been widened, and these old Vines spared till the young ones furnished the rafters. Odd-looking trees they are, certainly. The house plants are young as yet, but are progressing well towards the specimen state.

At Cooper's Hill, I found great improvement in plants. The Orchids are fresh and healthy, especially several of *Phalaenopsis*, one of which had several healthy leaves quite eighteen inches long. Mr. Dodds is well known as a successful exhibitor at the metropolitan shows. Indeed, this last season, he has taken more prizes than anyone else. He is also a good manager in other matters. I saw some Pine plants, of a full size, planted out, that were suckers only this last spring. Over these are growing Cucumbers, trained up the rafters, like Vines, and

growing in twelve-inch pots, producing fine foliage, and equally fine fruit.

In the plant stove I saw the beautiful *Thunbergia laurifolia* blooming profusely. It blooms from the axils of the leaves, in clusters; each bloom is as large as a crown-piece, and of a beautiful pale blue colour. *Thunbergia Harristi* is thriving freely, but has not bloomed yet. It would rather astonish some fearful gardeners to see how severely this excellent cultivator cuts in his stove bush plants,—such as Rondeletia, Franciscea, Vinca, and the like: they are truly stumped in. Many Ixoras are treated similarly, but not quite so severely.

I must just notice one more point of culture here, and then return to the winter garden, and that is, the forcing of Asparagus. The beds are two feet broad, and of considerable length. The walks between the beds are nearly as wide, and are separated from the beds by brick walls. Now, when forcing commences (which it had the day I was there) three of these walks, or spaces, are emptied, and filled with warm litter, mixed with leaves. The two intervening beds are covered with glass, or boards, in this form A, one side of which is hung in lengths, on hinges, and, consequently, when the grass is fit to cut, are easily lifted up, to gather it. This mode of forcing this delicious vegetable is a very good and successful one. I think Sea-kale might be managed in a somewhat similar manner; also Rhubarb, and any other vegetable that requires a gentle heat, and is improved by blanching.

LIST OF PLANTS IN THE WINTER GARDEN AT THE DELL.

<i>Araucaria imbricata</i>	<i>Polygala chamaebuxis</i>
<i>Pernettya mucronata</i>	<i>Euonymus, silver striped</i>
<i>Aucuba Japonica</i>	<i>Rhododendron, striped</i>
<i>Thuja aurea</i>	<i>Gaultheria procumbens, used as a border</i>
<i>Juniperus ericoides</i>	<i>Erica carnea</i>
<i>Berberis aquifolia</i>	<i>Erica Hibernica</i>
<i>Daphne cneorum</i>	<i>Menziesia polifolia rubra</i>
<i>Abies pumila</i>	
Each of the preceding is in two beds.	
Wallflower, three large central beds	<i>Helleborus niger (the Christmas Rose)</i>
<i>Aralis alpina</i>	<i>Alyssum saxatile</i>

These will be varied another season. It is intended to substitute variegated Hollies for the Wallflowers. Each bed is edged with Crocuses.

In the flower garden at Cooper's Hill, some beds are planted with dwarf Rhododendrons, and Hepaticas of different colours.

T. APPLEBY.

GENERAL JACQUEMINOT ROSE. PROPAGATING WISTARIA SINENSIS.

I HAVE this day (December 4) cut a bud of *Général Jacqueminot* Rose from the open border, as fully expanded and as well coloured as if it were June. I may add, that, from five plants of it, I have been able (near Dublin) to cut a full-blown Rose any day this last six months. I think, then, that *Général Jacqueminot* may lawfully rank A1 in your list of autumn-blooming Roses.

If any of your correspondents wish to extensively propagate the beautiful *Wistaria sinensis*, let them put in root cuttings the first time they can command bottom heat. I cut a piece of root, four inches and a half long, into nine parts, last April; placed them in a pan plunged into a Cucumber-bed; and I have now as many nice plants. So if any one has a strong, old plant or two, and wishes to supply the million, he can do so in a few months. It is far better than layering.—W. C.

GRAPE JELLY.

HEREWITH I send you a receipt for Grape jelly, made entirely from thinnings, and referred to in last week's COTTAGE GARDENER. As Mr. Hoare has been my instructor in growing Grapes, I have followed his directions in thinning them; which you are, no doubt, aware, is divided into two operations,—the first, merely

cutting out all the small, and thinning the close berries towards the latter end of July; the second, and most severe, is the cutting out of all berries not actually wanted to form the bunch; and this is performed between the 25th of August and the 5th of September, just before the berries begin to swell off; and it is from these the jelly is made:—

Put the Grapes into a jar, and place the jar in an oven, or on the top of a stove, to draw out all the juice; then squeeze them through a cloth, and to every pint of juice add 1 lb. of loaf sugar, and boil nearly an hour, after which, pour it into the pots; and let it stand till next day; then cover with brandy paper, and tie up tight.—J. JEFFERSON.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 137.)

SYNOPSIS OF APRICOTS.

I. KERNELS BITTER.

* Back of the stone impervious.

A. <i>Flesh freestone.</i>	St. Ambroise Shipley's White Masculine
Brussels	
Large Early	
Large Red	
Pine Apple	B. <i>Flesh clingstone.</i>
Red Masculine	Black Montgamet Portugal
Roman	
Royal	
** Back of the stone pervious (1).	
Alsace	Moorpark
Hemskerk	Peach
	Viard

II. KERNELS SWEET.

A. <i>Flesh freestone.</i>	Turkey Provence
Angoumois	
Breda	B. <i>Flesh clingstone.</i>
Kaisha	Orange
Musch Musch	

Alberge de Montgamet. See *Montgamet*.
D'Alexandrie. See *Musch Musch*.

ALSACE.—This is a variety of the Moorpark, and is of a very large size, with a rich and juicy flavour; and the tree, unlike the others of the race, is vigorous and hardy, and does not die off in branches, as the Moorpark does.

Amande Aveline. See *Breda*.

ANGOUMOIS (*Violet*; *Anjou*; *Rouge*).—Small, oval, flattened at the apex, and marked on one side with a shallow suture, the sides of which are raised. Skin clear, deep yellow on the shaded side, but dark rusty brown on the side next the sun. Flesh deep orange, juicy, and melting, separating from the stone; rich, sugary, and briskly flavoured; but, when highly ripened, charged with a fine aroma. Back of the stone impervious. Kernel sweet. End of July.

Ananas. See *Pine Apple*.

Anjou. See *Angoumois*.

Anson's. See *Moorpark*.

Aveline. See *Breda*.

BLACK (*Noir*; *Purple*).—About the size and shape of a small Orleans plum, to which it bears some resemblance. Skin of a deep black-purple colour next the sun, but paler on the shaded side, and covered with delicate down. Flesh pale red, but darker near the stone; juicy, but tasteless and insipid, and quite worthless to eat. Stone small, impervious on the back. Kernel bitter. Ripe in the beginning of August.

Blanc. See *White Masculine*.

(1). The bony substance at the back of the stone is pervious by a passage, through which a pin may be passed from one end to the other.

Blenheim. See *Shipley's*.

BREDA (*Aveline*; *Amande Aveline*).—Rather small, roundish, compressed on the sides, and sometimes entirely four-sided. Skin deep orange, dotted with brown spots next the sun. Suture well defined. Flesh deep orange, rich, highly flavoured, and free. Stone small, roundish, impervious on the back. Kernel sweet, with the flavour of a hazel-nut. End of August.

BRUSSELS.—Medium sized, rather oval, flattened on the sides. Skin pale yellow, dotted with white; red, interspersed with dark spots, next the sun. Suture deep next the stalk, diminishing towards the apex. Flesh yellow, firm, brisk flavoured, and free. Stone small, impervious on the back. Kernel bitter. The best to cultivate as a standard. Middle of August.

Common. See *Roman*.

Crotté. See *Montgamet*.

Dunmore's. See *Moorpark*.

Early Orange. See *Portugal*.

Gros d'Alexandrie. See *Large Early*.

Gros Commun. See *Roman*.

Gros Pêche. See *Peach*.

Gros Précoce. See *Large Early*.

Gros Rouge. See *Large Red*.

HEMSKERK.—Rather large, round, flattened on the sides. Skin orange, reddish next the sun. Suture distinct, higher on one side than the other. Flesh bright orange, tender, rich, and juicy, separating from the stone. Stone small, pervious on the back. Kernel bitter. This very much resembles, and, according to some, equals, the Moorpark. The tree is certainly hardier than that variety. End of July and beginning of August.

Hunt's Moorpark. See *Moorpark*.

KAISHA.—Medium sized, roundish, marked with a suture, which is deep towards the stalk, and gradually diminishes towards the apex, which is pitted. Skin pale-lemon coloured on the shaded side, and tinged and mottled with red next the sun. Flesh transparent, separating freely from the stone, clear pale yellow, tender, and very juicy, sugary, and richly flavoured. Stone small, roundish. Kernel sweet. Middle of August.

LARGE EARLY (*Précoce d'Esperen*; *Gros Précoce*; *Gros d'Alexandrie*; *De St. Jean*; *Précoce d'Hongrie*).—Above the medium size, rather oblong, and flattened on the sides. Skin pale orange on the shaded side; bright orange, and spotted with red, next the sun; slightly downy. Suture deep. Flesh deep orange, rich, juicy, separating from the stone, which is very flat, oval, sharp at the point, and impervious on the back. Kernel bitter. End of July and beginning of August.

LARGE RED (*Gros Rouge*).—This is a variety of the Peach apricot, and of a deeper colour than that variety. It is large, and of a deep orange-red colour. The flesh is rich and juicy, and separates freely from the stone. Stone pervious along the back. Kernel bitter. The tree is said, by Mr. Rivers, who introduced this variety, to be hardier than the Moorpark.

MONTGAMET (*Crotté*; *Alberge de Montgamet*).—Of small size, oval, somewhat compressed on the sides, and marked with a shallow suture. Skin pale yellow, with a slight tinge of red on the side next the sun. Flesh yellowish, firm, adhering to the stone, juicy, and agreeably acid; but when well ripened it is highly perfumed. Stone impervious, roundish. Kernel bitter. Ripe in the end of July; and generally used for preserving.

MOORPARK (*Anson's*; *Dunmore's*; *Hunt's Moorpark*; *Oldaker's Moorpark*; *Sudlow's Moorpark*; *Temple's*).—Large, roundish, more swollen on one side of the suture than the other. Skin pale yellow on the shaded side, and deep orange, or brownish red, next the sun, and marked with dark specks. Flesh bright orange, firm, juicy, and of rich luscious flavour; separating from the stone, which

is rough and pervious on the back. Kernel bitter. End of August and beginning of September.

MUSCH MUSCH (*D'Alexandrie*).—Small, almost round, and slightly compressed. Skin deep yellow; orange red next the sun. Flesh yellow, remarkably transparent, tender, melting, and the sweetest of all apricots. Stone impervious. Kernel sweet. Excellent for preserving. Ripe in the end of July.

De Nancy. See *Peach*.

Noir. See *Black*.

Oldaker's Moorpark. See *Moorpark*.

PEACH (*Pêche*; *Gros Pêche*; *De Nancy*; *De Würtemberg*; *Royal Peach*).—Large, oval, and flattened, marked with a deep suture at the base, which gradually diminishes towards the apex. Skin pale yellow on the shaded side, and a slight tinge of red next the sun. Flesh reddish yellow, very delicate, juicy, and sugary, with a rich and somewhat musky flavour. Stone large, flat, rugged, and pervious along the back. Kernel bitter. This is quite distinct from the Moorpark, now cultivated under that name; and is, doubtless, the parent of all the varieties so called. It may always be distinguished from the Moorpark by nurserymen; for, while the Moorpark may be budded freely on the common plum stock, the Peach apricot will only take on the Muscle stock. Ripe in the end of August and beginning of September.

Pêche. See *Peach*.

PINE APPLE (*Ananas*).—Large, roundish, and flattened, and marked with a rather shallow suture. Skin thin and delicate, of a deep golden yellow on the shaded side, but with a highly-coloured red cheek where exposed to the sun, and speckled with large and small red specks. The flesh is reddish yellow, tender, but somewhat firm; never becomes mealy, but is juicy, and with a rich pine-apple flavour. Stone oval and three-ribbed, and impervious along the back. Kernel bitter. Ripens in the middle of August.

PORTUGAL (*Early Orange*).—Very small, resembling, in shape and size, the Red Masculine. It is round, and divided on one side by a deep suture. Skin pale yellow on the shaded side, and deep yellow, tinged with red, and marked with brown and red russet spots on the side next the sun. Flesh deep yellow, tender, melting, with a rich sugary and musky flavour; adhering somewhat to the stone. Stone almost round, impervious along the back. Kernel bitter. Ripe in the beginning and middle of August.

Précoce d'Esperen. See *Large Early*.

Précoce d'Hongrie. See *Large Early*.

Purple. See *Black*.

RED MASCULINE.—Small, roundish. Skin bright yellow on the shaded side; deep orange, spotted with dark red, next the sun. Suture well defined. Flesh yellow, juicy, and musky. Stone thick, obtuse at the ends, impervious along the back. Kernel bitter. July.

ROMAN (*Common*).—Above medium size, oblong, sides compressed. Skin pale yellow, with rarely a few red spots next the sun. Suture scarcely perceptible. Flesh dull yellow, soft, and dry, separating from the stone, and possessing a sweet and agreeable acid juice, that makes it desirable for preserving. Stone oblong, impervious. Kernel bitter. Middle of August.

Rouge. See *Angoumois*.

ROYAL.—Large, oval, and slightly compressed. Skin dull yellow, tinged with red where exposed. Suture shallow. Flesh pale orange, firm, juicy, rich, and vinous, separating from the stone. Stone large and oval, impervious. Kernel bitter. An excellent apricot, and little inferior to the Moorpark. Beginning of August.

ROYAL ORANGE.—Above medium size, roundish, one side swelling more than the other. Skin pale orange in the shade; deep orange, tinged with red, next the sun. Suture well defined, deep towards the stalk. Flesh deep

orange, firm, and adhering to the stone, which is small, smooth, thick, and impervious. Kernel sweet. Middle of August.

Royal Peach. See *Peach*.

ST. AMBROISE.—This is a large, early apricot, almost the size of the Moorpark. It is compressed, of a deep yellow colour, reddish next the sun. Flesh juicy, rich, and sugary. Ripe the middle of August. The tree is said to be very vigorous, healthy, and a good bearer.

De St. Jean. See *Large Early*.

SHIPLEY'S (*Blenheim*).—Large, oval. Skin deep yellow. Flesh yellow, tolerably rich and juicy. Stone roundish, and impervious. Kernel bitter. Very productive and early, but not so rich as the Moorpark. End of July and beginning of August.

Sudlow's Moorpark. See *Moorpark*.

TARDIVE D'ORLEANS.—This is a late variety, ripening a fortnight after the Moorpark.

Temple's. See *Moorpark*.

TURKEY.—Medium size, nearly round, not compressed. Skin deep yellow; brownish orange next the sun, and spotted. Flesh pale yellow, firm, juicy, sweet, and pleasantly sub-acid, separating from the stone. Stone large, rugged, and impervious. Kernel sweet. Middle of August.

VIARD.—This, according to Mr. Rivers, is an early variety of the Peach apricot, with rich, juicy flesh. The tree is hardy.

Violet. See *Angoumois*.

WHITE MASCULINE (*Blanche*).—Small, round, and somewhat compressed at both ends. Skin covered with a fine white down; pale yellow, tinged with brownish red, next the sun, and dull white in the shade. Flesh pale yellow, adhering in some degree to the stone; fine and delicate, juicy, sugary, and excellent. Kernel bitter. Ripe the end of July.

De Wirtemberg. See *Peach*.

(To be continued.)

EDGINGS TO WALKS.

As a continuation of the subject of "Garden Walks," at page 150, walk edgings are a necessary adjunct; for without these the walk, however good it may be, is not complete, and never looks well. An edging of some description is as necessary to a walk as a frame is to a picture; fortunately, also, there is a greater variety of materials suitable for edgings than for walks,—the latter depending so much on the local productions of the place; whereas edgings are often formed of living plants, which vary considerably in appearance and effect. A few of the most common in use may be mentioned here, as well as some other things in use in like manner. Beginning, however, with the live edgings, we have, in the first place,—

Box-edging, which is, unquestionably, the most useful of all, and generally adapted to most soils. Yet there are some places where it will not thrive, the plants either dying off in summer, or always bearing a sickly hue. Here (Linton Park), it is far from healthy, and patches of it frequently die off without being clipped. In stiff, clayey soils, however, it is quite at home. There are several varieties of it: the very dwarfest scarcely requires any cutting at all. I have had some planted four years, and never cut, and yet not unbecomingly high. In places, therefore, where Box will grow well, it is, without exception, the most useful edging plant we have.

Gentianella, next to Box, is generally much esteemed, particularly for its bright blue flowers. This, also, likes a stiff, rather moist soil. It ought to stand three or four years, or more, without planting, as it flowers better when not too much meddled with. This pretty herbaceous plant is not so much grown as it ought to be. But every place does not suit it.

Thrift, likewise, makes an excellent edging, and, unlike the two last, prefers a dry, stony soil. It being a native of the seacoast, it may be planted in situations where nothing else will grow. But it is worthy of a place almost anywhere, and generally grows very fast, requiring to be replanted every year, or nearly so, in which case its roots ought to be laid into the border, so as not to have occasion to disturb the walks each time. Light soil suits it best; but it will not endure the shade of trees.

The Wild Heath, *Erica vulgaris*, or its immediate neighbour, *Calluna vulgaris*, are both occasionally used as edging plants, by being cut into shape, and kept to that size. But they will only grow on certain soils.

London Pride is a fast-spreading plant for an edging, but has the merit of growing better underneath trees, than most other plants, and may be planted where any rough edging is allowable. But narrow walks are speedily overrun with it. Its appearance, however, is good by the sides of a broad walk, where Box and other plants will not live.

Strawberries are often planted in kitchen gardens for edgings; but they are untidy and straggling, except for their utility, and that is often of a questionable kind. They are not worth growing as an edging alone. But if it be determined to grow them, select the dwarfest kinds, —such as *Old Scarlet*, *Black Prince*, &c.

Double Daisies make a neat edging for a short time, but, like Thrift, they speedily get out of bounds.

Lemon and common Thyme are also occasionally used for edgings, but they are only fit for wide walks, and in places where nicety of outline is not considered.

Turf is, perhaps, the most useful of all edgings. But I do not like to see it in breadths of less than eighteen inches wide. Narrow strips of four or five inches, which I have seen in some places, would not live everywhere, and when broken and gapped it looks badly. But a wide margin of Turf is, perhaps, the prettiest and most useful of all edgings, and, it is needless to say, the most durable.

Several other herbaceous plants are used as edgings at times,—as Pinks, Primulas, Primroses, Polyanthus, and others,—as well as a whole host of annuals. But these have only a temporary existence. Some small-growing vegetables, or herbs, are also planted for a like purpose,—as Chamomile, Pennyroyal, &c. The best of this class, perhaps, is a small bulb, now very little grown, the Cive, which at one period of its growth is not excelled by anything whatever.

Double and single Violets make tolerably good edgings, but certainly not neat ones. The same may be said of some Sedums, Arabis, Cherianthus, and others. But where a want exists for a particular plant, and that plant available for edging purposes, it is perfectly right to use it so; and, as soils differs as well as taste, it is better to have a choice of objects.

And now, having given a number of plants, all at times used as edgings to walks, a few words on other things occasionally used that way may be serviceable.

Stone edgings, dressed stone beading, showing about three inches above ground, and less than that in breadth, look remarkably well, when correctly placed, to do which it ought to be on a slight foundation of stone or brick-work. An imitation stone is much oftener used, as being cheaper; but it will not always stand the weather.

Fancy tiles, of various patterns or designs, have at various times been introduced; but, except for particular places, they seldom look well. The great fault most of them have, is their fanciful shape and lack of substance. A slender tile, perhaps only one inch thick, however well it may be curved to shape, is too insignificant for a walk ten feet wide.

Flints, of something like a uniform size, and partly imbedded in the ground, make a tolerably good-looking edge for a time. But they are liable to get loose, and soon become discoloured. Broken pieces of spar, or other shining stone, also look well for a time, but are liable to

the same objection, as is also the shingle gathered on the seacoast, or from rivers. This last is also more difficult to keep firm in the ground. But, where a considerable space is to be paved, pebbles are the most suitable.

Oak boarding, or plank, two or three inches thick, I once saw put down as edging to a kitchen garden of large size, where Box would not grow well. But even Oak is perishable, and expensive in the first instance; otherwise, its appearance (being painted) was very good.

Ironwork, of various patterns, is often met with as edgings. But for very long lengths it becomes expensive, and is better adapted for training small-growing plants on, than for being alone. But something better that way might be designed by some skilful hand.

Slate edgings are generally too thin to look well, and when thicker are expensive. An edging of this kind, however, or some other, is often used to keep turf within its proper bounds. But in this case it ought to be below the level of the turf, rather than above it, on account of the mowing.

An old thick rope makes a capital fancy edging, by being fastened to some stakes, or other support. Raised a few inches above the ground, at intervals of half-a-yard or so, on stakes, to form a sort of festoon, it looks very pretty.

Good hard kiln bricks certainly make the best and cheapest of all edgings, for shady places, or where a live edging is not wanted. We lay them here something like a furrow turned over with the plough, the flat side of the brick and its edge both being at an angle of 45°, one edge being up. When carefully put down this way, they are often mistaken for prepared tiles; and, being firm in the ground, resist the broom and all reasonable traffic. Curved lines may also be made as well as straight ones, and are alike available under trees and in the open ground, and they might have, if required, a live edging planted by the side of them. They certainly form the firmest and best of edgings, short of those more expensive articles, manufactured expressly for the purpose.

Several other things will, doubtless, suggest themselves to the various parties coming in contact with them. But enough has been said to show that walk edgings may be formed in various ways; and though such public walks as lead through the parks of London, and other populous places, be difficult to keep in proper outline, smaller and private places have no such excuse. Edging, therefore, of some kind or other, must be had; and the above list of plants, and other things used that way, will enable the amateur, or others, to select what will answer his purpose best. The list, though a long one, is yet capable of being increased; and, doubtless, other localities furnish something or other altogether different: if so, the readers of THE COTTAGE GARDENER will, I am sure, be glad to learn what they are, and how they answer.

J. ROBSON.

QUERIES AND ANSWERS.

DISEASED CUCUMBER PLANTS.

"I have twenty-four pots of Cucumber plants in the front of a stove, where I grow Pines and Vines overhead. I potted them in September, in loam, bog, and chopped moss, and put them on this front shelf. I have cut a few very ordinary fruit of them. I water them every other day, as I think they require it. The edges of the leaves seem to go off, as if frostbitten. I have got some loam all round the inside of the pot, and about six inches of moss round the stems of the plants."—A THURSTON SUBSCRIBER.

[We fear that you have got one form of Cucumber disease that is difficult to eradicate; the best means of doing so is, fresh soil, a moist, growing atmosphere, and plenty of fresh air. If it is not the disease, we should imagine that the mass of moss above the roots deceives you as to the state of moisture of the roots, which, at this season,—whilst they should not be dry,

neither should they be soaked with moisture,—we would remove most of the moss, and lay on pieces of fibry heath soil instead. A dry atmosphere, on a sunny day, will also cause the sides of the leaves to burn. Too high a temperature, rising from the pipes, will also scald them. We have seen such effects produced from syringing pipes when very hot. Keeping up a high temperature, in dull weather, will make the leaves so tender, that the first hour's bright sun will be apt to produce the result. See articles on Cucumbers for the last three volumes, and also from the commencement.]

HOT-WATER PIPES, SHOULD THEY BE LEVEL?

"Will you please to inform me, if two rooms, one above the other, are heated with hot-water pipes,—the rooms being each, say, fifty feet long,—it is requisite for the efficient working of the apparatus, that the flow-pipes should have a gradual rise, and the return ones a fall? Or will it answer as well if they are laid quite level? Will more than one escape, for the confined air in each room, be needed?"—I. H.

[We should prefer a couple of inches of rise; but the water will circulate very well on the level. One air-pipe in each will be sufficient, and best at the farthest and highest point. The air-pipe in the lower room should stand higher than the water in the upper room. A very small pipe will do, provided no dust, or insects, are allowed to choke it up.]

SHOOTS OF INDIARUBBER PLANT DECAYING.

"Can you explain the reason why the shoots of a fine India-rubber plant have fogged off, as you will see by the specimens enclosed? I have had the plant ten years, from original cutting. It stands out all the summer, and is placed in the greenhouse in the winter. It was cut back this summer, whilst standing out, and moved into the greenhouse about the beginning of October, standing on the centre slab, about two feet from the roof."—C. M. M.

[We do not exactly know the cause of your young shoots decaying, or fogging off, just below the large terminal bud; but we have noticed it done under two different circumstances,—first, when, after growing very vigorously, and the young shoots charged with juices, a sudden sharp frost seized the very tender part close to the point, and so ruptured the vessels, that the part became brown and black all through in a few days; and secondly, when, after a plant was cut down like yours, and growing freely out of doors, it was put in a sunny place in a greenhouse, exposed to a powerful autumn sun, and water several times neglected. At first, the terminal bud merely hung its head, when the larger leaves hardly showed any distress; but, several times repeated, the tender part at the point of the shoot, just behind the terminal bud, shrivelled up, and decayed; and, consequently, new leaders had to be formed the next season from unstarted buds behind. Whether any, or both, of these causes operated on your plant, we could not say, without a knowledge of all the circumstances of treatment.]

RULES RELATIVE TO GROWING CHRYSANTHEMUMS IN POTS.

"I am sorry to see your statements vary so much,—as in one number of THE COTTAGE GARDENER (for November 16th), the opinion is given in favour of plants fit for exhibition, even if the roots get their nourishment from over the pots, or below the pots; while in the number for November 30th, such grown plants are recommended for disqualification. My own idea is, that the object of stating in the schedule of a society certain-sized pots, is, to show the cultivator's skill in producing as large and well-grown plants in those pots as possible; but, if his competitor understands that he can grow them over the pots, and below the pots, what chance does the one stand who confines himself strictly to the sized pot. I have had all the chief authorities give their opinion, that if the roots of plants are not confined to the pots in which they are said to have been grown, that such plants cannot be legally called to have been *grown in the pots*, as part of them have been grown outside. The question is of very great importance, as, if not properly understood, it will be carried to very great extent with other plants, as well as the

Chrysanthemum. If it is fair for the Chrysanthemum, why not for the Geranium?"—ALBERT DEAN.

[We quite agree with all that you state, except where you aver that we have varied in our opinion. We agree with you, that "if the roots of plants are not confined to the pots in which they are said to have been grown, such plants cannot be legally said to have been grown in the pots." If the holes at the bottoms of the pots are enlarged for the purpose of allowing the roots to get out into a more extensive pasture, and a large amount of roots do so get out; or, if other roots are encouraged, and grow numerously over the tops of the pots—these facts ought to disqualify the plants. We meant no more by our answer in our number of November 16th, than that a few roots coming out of an ordinary drainage-hole, or over the top, undesignedly, ought not to disqualify.—EDS. C. G.]

ROSES AND CLIMBERS FOR A SOUTH-EAST WALL.

"Will you give information as to what Roses and other climbers you would recommend to cover a house with a south-east aspect, that stands high, and is rather exposed? The country is Cheshire, and the soil sandy."—A SUBSCREIBER AND ADMIRER.

[The best Roses, under the circumstances, would be *Félicité Perpetuelle* and *Blairii No. 2*, for summer, and *Noisettes* for autumn; and any good kinds might be budded on these, by way of testing how far they are suitable to the soil and locality. *Fellenberg* is an excellent *Noisette*, and the nearest climbing Rose to a crimson. *La Marque* is the best of the large whites; but both are as tender as *Jean Desprez*, and all the three are damaged in very hard winters: if they were budded on *Félicité Perpetuelle*, and the latter on their own roots, there could be no better Roses for covering your house. *Clematis montana* is the strongest and the best earliest other climber to recommend for such a place as yours. But a white Jasmine and Japan Honeysuckle are the cleanest plants of all climbers for a house. Suppose you try one of each—or, say Jasmine—on each side the door, the said Honeysuckle round two opposite windows, the Roses to fill in the rest, and the Clematis to come in above them all, from any corner, or side, of a house. Long shoots of the Clematis might then hang down among the other climbers.]

ICE-HOUSES.

"I have been anxiously looking over the back numbers of THE COTTAGE GARDENER, in order to see if there be anything concerning an ice-house; but my labour has been in vain. I should be glad if you could inform me whether ice keeps well on limestone. We have an ice-house built on the limestone, in which ice will not keep longer than the month of May. I cannot tell to what to attribute it, unless it be the limestone."—KILKENNY.

[Anything that is known about ice and ice-houses, ice-stacks, packing and pounding, and the icing of every kind of thing, has been written upon in THE COTTAGE GARDENER. Limestone could make no difference in the keeping of the ice. We have seen an ice-stack in the bottom of a chalk pit; and that would be the very place we would select for our own iceberg, because the drainage would be perfect through the chalk. Perfect drainage and perfect ventilation are the only two secrets for keeping ice. The old kinds of ice-houses were well drained; but in the rest of their arrangements they were mere stews for melting ice. If you will send us a sketch of your ice-house, and of the way you fill it, and provide for its safety, we may be able to point out where the fault lies. At all events, limestone, or any kind of stone, does not injure your ice. As you could find nothing in our back numbers about ice and ice-houses, the wonder is, that your ice keeps up to May. That offhand way of looking for, and doing things, would not help us much, here in England; and we would advise you to look again, and to look more carefully and to the purpose, over the back numbers of THE COTTAGE GARDENER, after you send us your own way of keeping ice, which seems very wasteful.]

MONRO'S CANNON BOILER.

I HAVE seen a notice in your paper of November 30th, of Messrs. Low and Co.'s Nursery, Clapton, in which you state

that there are "two of Monro's cannon boilers fixed there, the one at the price of £8, and the other at £5,"—this should have been £8 10s. and £5 10s. Will you be kind enough to insert this, as, there being now a large demand for these boilers, this error might lead to some confusion.—J. JONES, 6, *Bankside*.

TRADE LISTS.

We have received a set of seven catalogues, of various descriptions, of Nursery Stock, cultivated by Messrs. F. and A. Dickson and Sons, of Chester, which, for execution and care in the preparation, reflect great credit on what may now be called the literature of the trade; for the catalogues of the present day assume more the character of literary productions, than of price-currents. The catalogues in question consist severally of—*Stove and Greenhouse Plants, Herbaceous and Alpine Plants, Hardy Ornamental Trees and Shrubs, Forest Trees, Fruit Trees, Roses and Dahlias, Pelargoniums, Bedding Plants, &c.*

TO CORRESPONDENTS.

GATHERING PEARS (*Goddess*).—The time when a Pear is ready for gathering, is indicated by its stalk readily parting from the spur by which it is borne. The readiness to part is not shown by giving the Pear a hard pull, but by lifting it, and bending it back gently. Almost all Pears have ripened a month or more earlier this year than they do usually. Notwithstanding your examination of the surface roots of the two *Black Hamburgh* Vines which prematurely withered, we have little doubt but that the withering arose from the failure of some of the main roots, at their extremities, if not generally.

HYACINTH OFFSETS (*A Country Subscriber*).—You give advice without a correct knowledge of the subject. To raise Hyacinths from offsets in this country, has never yet been practised successfully; therefore, we said "it is not an object to propagate the Hyacinth by offsets." We have no interest in the matter, further than to wish some one would send us full directions for so raising them, which he has proved to be successful. We would readily publish it.

TWENTY-FOUR BEST VARIEGATED PLANTS (*Five Years Subscriber*).—We will get the names of the most popular variegated plants. But you must wait awhile.

WOODLICE (*C. C.*).—We have repeatedly stated the only modes known for trapping woodlice, and there is no specific for keeping them from your Mushrooms. They harbour, probably, in the dung of which the bed is formed. If you can find any place where they congregate, deluge it with boiling water.

Liquid MANURE IN WINTER (*T. O. G.*).—When our liquid-manure tank requires emptying at this season, we pour the liquid over vacant ground; and when the weather is open, we pour it upon Asparagus and Rhubarb beds.

UNFRUITFUL PEAR TREES (*J. V. O.*).—By cultivating your border with Cabbages and other vegetables, you have driven the roots of your Pear trees down into the subsoil, where they have not sufficient action and vigour to support and develop the young fruit. Dig a trench round them as deep as they go; cut off all tap roots that penetrate to the subsoil; lay the young and healthy roots near the surface, and keep them there by encouraging them with a light top-dressing annually. Never again grow Cabbages on your fruit-tree borders.

MARKET APPLES (*G. T. Beazley*).—You may make up your hundred Apples for market purposes with *Bedfordshire Foundling*, *Alfriston*, *Blenheim Pippin*, *Cellini*, *Duchess of Oldenburgh*, *Golden Noble*, *Golden Winter Pearmain*, *Kerry Pippin*, *Yorkshire Greening*, and *Dunelow's Seedling*. As you say your subsoil is gravel, plant your trees high.

NAMES OF FERNS (*Y. F.*).—Your Ferns are as follows:—1. *Lastrea dilatata*, Broad Prickly-toothed Buckler Fern. 2. *Athyrium Filix-femina*, var. *latifolium*. 3. *Lastrea Filix-mas*, Male, or common Buckler Fern.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

DECEMBER 29th and 30th. BURNLEY AND EAST LANCASHIRE. Sec., Angus Sutherland. Entries close December 10th.

JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW. JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton. Entries close December 11th.

JANUARY 18th, 19th, and 20th. CHESTERFIELD AND SCARSDALE. Secs., W. M. Hewitt, and J. Charlesworth. Entries close January 4th.

JANUARY 20th and 21st, 1859. LIVERPOOL. Secs., R. Teebay, and H. Oakey.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs., R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Pitman, Esq.

N.B.—Secretaries will oblige us by sending early copies of their lists.

THE BIRMINGHAM POULTRY SHOW.

HAVING in our previous numbers given the list of prize-takers, and our comments, we now publish the very numerous commendations of the Judges. We consider for a pen to be

"highly commended" at such an exhibition, is evidence of merit equal to that afforded by taking a first prize at smaller shows.

For the notes upon the Pigeons, we are indebted to the *Midland Counties Herald*.

SPANISH.—Highly Commended, J. Whittington, Wotton Wawen, Henley-in-Arden; T. C. Nelson, Newhall Street, Birmingham; W. R. Bull, Newport Pagnell; E. Page, Hawthorn Villa, Smethwick; J. Garlick, Hygeia Street, Everton, Liverpool. Commanded, G. Botham, Wexham Court, Slough. **Hens.**—Highly Commended, A. F. Watkin, Walkley, Sheffield; S. H. Hyde, Moss Cottage, Ashton-under-Lyne; Miss H. Busst, Walsall. Commanded, L. Craigie, Woodlands, Chigwell, Essex; M. Ridgway, Dewsby, Yorkshire; T. Amphlett, Lichfield Street, Walsall; T. Cole, Lord's Wood Road, Beech Lanes, Birmingham. **Chickens.**—Highly Commended, Mrs. H. Fookes, Whitechurch, Blandford; W. W. Brundrit, Churchfield House, Runcorn; J. K. Fowler, Prebendal Farm, Aylesbury; D. S. Moore, Teddesley House, Walsall; M. Ridgway, Dewsby. Commanded, T. Cole, Lord's Wood Road, Beech Lanes, Birmingham. **Pullets.**—Highly Commended, Mrs. J. Dain, Lea Brook, Staffordshire; J. Clews, Walhouse Street, Walsall.

DORKING (Coloured).—Highly Commended, Lady S. Desvœux, Drakehall Hall, Burton-upon-Trent; Mrs. H. Smith, The Grove, Cropwell Butler, Bingham, Nottinghamshire; Hon. W. W. Vernon, Wolseley Hall, Rugeley; Rev. J. Hill, The Citadel, Hawkstone, Shropshire; Rev. G. Hustler, Appleton, Tadcaster, Yorkshire. Commanded, J. Robinson, Vale House, Garstang, Lancashire. **Hens.**—Highly Commended, Mrs. H. Smith, The Grove, Cropwell Butler, Bingham, Nottinghamshire; Miss M. A. S. Perkins, Sutton Coldfield; Hon. and Rev. T. H. N. Hill, Berrington, Shrewsbury; C. H. Wakefield, Malvern Wells, Worcestershire; G. M. Kettle, Dallicott House, Bridgnorth; J. Douglas, Wolseley, Rugeley; S. Burn, 1, East Terrace, Whitby; J. R. Smith, Metchley Cottage, Edgbaston, Birmingham; H. Smith, The Grove, Cropwell Butler, Bingham, Nottinghamshire; J. E. Wilson, Clifton Cottage, Claverley, Bridgnorth. Commanded, J. Horrocks, jun., Preston, Lancashire. **Chickens.**—Highly Commended, Miss Wakefield, Malvern Wells, Worcestershire; Mrs. Wakefield, Malvern Wells, Worcestershire; Right Hon. the Earl of Harrowby, Sandon Hall, Staffordshire; Lord Stanhope, Bretby Hall, Burton-upon-Trent; W. Dolby, Syston Hall, Grantham; Capt. W. Hornby, R.N., Knowsley Cottage, Prescot; Rev. F. Thursby, Abington Rectory, Northampton; Sir H. Desvœux, Drakehall Hall, Burton-upon-Trent; W. Robinson, Vale House, Garstang, Lancashire; J. Faulkner, Bretby Farm, Burton-upon-Trent; H. W. B. Berwick, Helmsley, York; G. H. Chune, Lincoln Hill House, Coalbrookdale; W. Bromley, Smithfield, Birmingham. Commanded, Mrs. Hanbury, Leamington Hastings, Rugby; Miss Wakefield, Malvern Wells, Worcestershire; Mrs. Wakefield, Malvern Wells, Worcestershire; Hon. W. W. Vernon, Wolseley Hall, Rugeley; A. H. L. Popham, Netherwood, Lyndhurst, Hampshire; J. D. Hewson, M.D., Coton Hill, Stafford; S. Smith, Brandwood Villa, King's Norton, Worcestershire. **Pullets.**—Highly Commended, Lady E. Stanhope, Bretby Hall, Burton-upon-Trent; Lady S. Desvœux, Drakehall Hall, Burton-upon-Trent; Mrs. Graham, Yardley, Birmingham; Mrs. W. Hornby, Knowsley Cottage, Prescot; T. B. Wright, The Quarry House, Great Barr, Staffordshire; J. Whittington, Wootton Wawen, Henley-in-Arden. Commanded, Mrs. Wakefield, Malvern Wells, Worcestershire; A. H. L. Popham, Netherwood, Lyndhurst, Hampshire; J. Smith, Henley-in-Arden; J. Whittington, Wootton Wawen, Henley-in-Arden.

DORKING (White).—Highly Commended, Capt. Beardmore, Upplands, Fareham, Hampshire. Commanded, Right Hon. the Countess of Dartmouth, Patshull. **Chickens.**—Highly Commended, Miss M. Jackson, Vale House, Garstang; H. Allsopp, Malvern; J. Camm, Farnsfield, Southwell, Nottinghamshire; G. C. Peters, High Street, Birmingham. Commanded, Miss M. Jackson, Vale House, Garstang; J. Jennens, The Friary, Hamstead, Birmingham.

COCHIN-CHINA (Cinnamon and Buff).—Highly Commended, Miss M. E. Fowler, Prebendal Farm, Aylesbury. Commanded, H. Tomlinson, Balsall Heath Road, Birmingham; R. W. Fryer, Hinton Road, Hereford. **Chickens.**—Highly Commended, T. H. Barker, Hovingham, Malton, Yorkshire; W. Dawson, Hopton Mirfield, Yorkshire. Commanded, R. E. Ashton, Limefield, Bury, Lancashire; H. Tomlinson, Balsall Heath, Birmingham.

COCHIN-CHINA (Brown and Partridge-feathered).—**Chickens.**—Highly Commended, Miss A. Fookes, Whitechurch, Blandford; B. J. Ford, Ide, Exeter; T. H. Stretch, Marsh Lane, Bootle, Liverpool. Commanded, Miss V. W. Musgrave, West Tower, Aughton, Liverpool; J. L. Harrison, Foxholes, Lancaster; J. Busst, jun., Walsall; — Cartwright, Oswestry, Shropshire; D. S. Moore, Teddesley House, Walsall.

COCHIN-CHINA (White).—Commanded, Rev. J. Taylor, Prestley Lodge, Cheltenham; H. Loe, 39, High Street, Winchester. **Chickens.**—Highly Commended, R. Chase, Moseley Road, Birmingham; G. Lamb, Red Hill House, Compton, Wolverhampton. Commanded, Mrs. H. Child, jun., Sherbourne Road, Birmingham; H. Loe, 39, High Street, Winchester, Hampshire.

BRAHMA POOTRA.—Commended, L. Craigie, Woodlands, Chigwell, Essex. **Chickens.**—Highly Commended, Miss E. Breavington, Vicarage Farm, Hounslow, Middlesex; J. K. Fowler, Prebendal Farm, Aylesbury.

POLISH (Black with White Crests).—Commended, T. P. Edwards, Railway Station, Lyndhurst. **Chickens.**—Highly Commended, T. P. Edwards, Railway Station, Lyndhurst. Commanded, G. Ray, Ivy Cottage, Minehead, Lyndhurst.

POLISH (Gold).—Highly Commended, G. Greenall, jun., Grappenhall, Warrington. **Chickens.**—Commended, C. S. Dixon, North Park, Bradford, Yorkshire.

POLISH (Silver).—Highly Commended, G. C. Adkins, The Lightwoods, Birmingham. Commanded, Her Grace the Duchess of Sutherland, Trentham Hall, Staffordshire; Mrs. Dawson, Selly Oak, Birmingham. **Chickens.**—Highly Commended, P. H. Jones, High Street, Fulham, London.

HAMBURGH (Golden-pencilled).—Highly Commended, J. B. Chune, Lincoln Hill House, Coalbrookdale. **Chickens.**—Highly Commended,

R. R. Clayton, Hederley Park, Slough; J. Lowe, Whitmore House, Birmingham; Rev. C. R. Pettat, Ashe Rectory, Basingstoke; C. R. Titterton, Birmingham; R. Hawksley, jun., Southwell, Nottinghamshire. Commanded, G. II. Chune, Lincoln Hill House, Coalbrookdale; H. Wiggin, Metchley Grange, Harborne.

HAMBURGH (Golden-spangled).—Highly Commended, W. Ludlam, Bradford, Yorkshire. Commanded, W. C. Worrall, Rice House, Liverpool. **Chickens.**—Highly Commended, W. R. Lane, Bristol Road, Birmingham; E. Collins, 114, Moland Street, Birmingham; S. Kershaw, Heywood, Manchester. Commanded, Miss M. Jackson, Vale House, Garstang.

HAMBURGH (Silver-pencilled).—**Chickens.**—Highly Commended, E. T. Archer, Malvern; D. Harding, Middlewich. Commanded, Mrs. J. B. Chune, Lincoln Hill House, Coalbrookdale; Sir R. Peel, Bart., M.P., Drayton Manor; Rev. F. B. Pryor, Bennington Rectory, Stevenage, Hertfordshire.

HAMBURGH (Silver-spangled).—Commended, G. H. Chune, Lincoln Hill House, Coalbrookdale. **Chickens.**—Highly Commended, B. Robbins, Ashe, Basingstoke. Commanded, Mrs. H. Sharp, Mill Lane, Bradford, Yorkshire; H. Beale, Wexham, Slough.

GAME (White and Piles).—Highly Commended, Mrs. J. Jennens, The Friary, Hamstead, Birmingham; J. Chessum, Ickwell House, Biggleswade, Bedfordshire. Commanded, W. Ballard, Woodcote Lodge, Leamington. **Chickens.**—Commended, Col. W. Blackburn, Claremont House, Leamington; T. T. Burman, Lady Lane, Hockley Heath, Birmingham.

GAME (Black-breasted and other Reds).—Highly Commended, R. W. Vernon, Wolseley Hall, Rugeley; E. Lowe, Comberford Mill, Tamworth; R. Swift, Southwell, Nottinghamshire. **Chickens.**—Highly Commended, Mrs. G. W. Moss, The Beach, Liverpool; G. W. Moss, The Beach, Liverpool; A. Sutherland, Burnley, Lancashire; W. Dawson, Selly Oak, Birmingham; T. Whitaclere, Melton Mowbray, Leicestershire; W. H. Swann, Farnfield, Southwell, Nottinghamshire. Commanded, W. Cox, Brasford Hall, Derby; Right Hon. the Earl of Derby, Knowsley Farm, Liverpool; J. T. Wilson, Redditch; W. Wright, West Bank, Widnes, Warrington; J. Hindson, Barton House, Everton, Liverpool; H. Worrall, Spring Grove, West Derby, Liverpool; Mrs. W. Wright, West Bank, Widnes, Warrington; W. Mellows, Carburton, Nottinghamshire; T. T. Burmann, Lady Lane, Hockley Heath, Birmingham. (An extraordinarily good class.)

GAME (Blacks and Brassy-winged, except Greys).—Commended, W. G. Jones, Shirley, Birmingham. **Chickens.**—Commended, S. Rodway, Pershore Road, Birmingham; G. H. Chune, Lincoln Hill House, Coalbrookdale.

GAME (Duckwings, and other Greys and Blues).—Commended, J. Douglas, Wolseley Hall, Rugeley; W. Wilkinson, North Park, Bradford. **Chickens.**—Highly Commended, Miss E. Sutherland, Burnley, Lancashire; Right Hon. Lord Berwick, Cronkhill, Shrewsbury; J. Wright, Hulland Hall, Ashbourne; G. Hellewell, Walkley, Sheffield. Commanded, Col. W. Blackburn, Claremont House, Leamington; W. Shield, Northampton.

MALAY.—Highly Commended, C. Ballance, 5, Mount Terrace, Taunton, Somersetshire. **Chickens.**—Highly Commended, J. J. Fox, Devizes, Wiltshire.

ANY OTHER DISTINCT BREED.—First, G. M. Kettle, Dallicott House, Bridgnorth. First, J. Smith, Henley-in-Arden. First, T. Bridges, Bridge Cottage, Croydon. Second, Mrs. Robinson, Mansfield Woodhouse, Nottingham. Second, A. F. Watkin, Walkley, Sheffield. Second, W. Dawson, Hopton Mirfield, Yorkshire. Second, H. M. Hitchcock, Dunchurch, Rugby.

CLASSES FOR SINGLE COCKS.

SPANISH.—Highly Commended, Miss M. L. Rake, Brandon Hill, Bristol; Mrs. J. C. Hall, Surrey House, Sheffield; W. W. Brundrit, Churchfield House, Runcorn; W. R. Bull, Newport Pagnell; J. Whittington, Wootton Wawen, Henley-in-Arden; J. K. Bartram, Bath. Commanded, Miss M. L. Rake, Brandon Hill, Bristol; H. Townshend, Stretton-en-le-Field. Ashby-de-la-Zouch; W. W. Brundrit, Churchfield House, Runcorn; J. W. George, Beeston Padge, Nottinghamshire.

DORKING.—Highly Commended, Mrs. Arkwright, Spondon House, Derby; Mrs. Hanbury, Leamington Hastings, Rugby; Mrs. W. Joshua, Perrott's Brook, Cirencester; Sir H. Desvœux, Bart., Drakehall Hall, Burton-upon-Trent; H. Beale, Wexham, Slough; J. D. Hewson, M.D., Coton Hill, Stafford; T. Ullock, Quarry House, Windermere; C. H. Wakefield, Malvern Wells; J. E. Wilson, Clifton Cottage, Claverley, Bridgnorth; G. W. Moss, The Beach, Aigburth, Liverpool. Commanded, Right Hon. the Earl of Chesterfield, Bretby Hall, Burton-upon-Trent; H. Townshend, Stretton-en-le-Field, Ashby-de-la-Zouch; T. Ullock, Quarry House, Windermere; H. Smith, The Grove, Cropwell Butler, Bingham, Nottinghamshire.

COCHIN-CHINA.—Highly Commended, Miss V. W. Musgrave, West Tower, Aughton, Liverpool; T. H. Stretch, Marsh Lane, Bootle, Liverpool.

BRAHMA POOTRA.—Highly Commended, C. Dain Southampton. Commanded, L. Craigie, Woodlands, Chigwell, Essex; Master R. R. Fowler, Prebendal Farm, Aylesbury.

HAMBURGH (Golden-pencilled).—Highly Commended, J. Lowe, Whitmore House, Birmingham; W. B. Applebeck, 6, Bull Ring, Birmingham; J. Martin, Mildenhall Mill, Claines, Worcester; J. Y. Madeley, York House, Hall Green, Birmingham; R. Hawksley, jun., Southwell, Nottinghamshire.

HAMBURGH (Golden-spangled).—Highly Commended, Mrs. W. Joshua, Perrott's Brook, Cirencester; W. C. Worrall, Rice House, Liverpool; I. Davies, Bull Street, Ilarborne, Birmingham; Messrs. Haigh and Hartley, Tip Hill Bank, Holmfirth, Yorkshire; Rev. S. T. Sproston, Wednesfield Heath, Wolverhampton. Commanded, Rev. S. T. Sproston, Wednesfield Heath, Wolverhampton.

HAMBURGH (Silver-pencilled).—Highly Commended, Mrs. T. L. Fellowes, Beighton Rectory, Norfolk; J. W. George, Beeston Padge, Nottinghamshire. Commanded, D. Harding, Middlewich.

GAME.—Highly Commended, W. Mellows, Carburton, Nottinghamshire;

W. G. Jones, Shirley, Birmingham; W. Shield, Northampton; T. Whitacre, Melton Mowbray, Leicestershire; S. Rodway, Pershore Road, Birmingham. Commended, G. Smith, 53, Aston Street, Birmingham; W. H. Swann, Farnsfield, Nottinghamshire.

SWEEPSTAKES FOR GAME COCKS.—Highly Commended, E. Archer, Malvern; Hon. W. W. Vernon, Wolseley Hall, Rugeley; J. Camm, Farnsfield, Southwell, Nottinghamshire; E. Lowe, Comberford Mill, Tamworth; J. Hindson, Barton House, Everton, Liverpool; H. Shield, Northampton. Commended, H. Shield, Northampton. (The best class of Game Cocks ever exhibited in England.)

BANTAMS (Gold-laced).—Highly Commended, Mrs. Cruwys, Cruwys Morchard Court, Tiverton, Devonshire; Rev. G. F. Hodson, North Petherton, Bridgewater; C. Punchard, Blunt's Hall, Haverhill, Suffolk. Commended, Mrs. Hodson, North Petherton, Bridgewater; M. Leno, jun., Harpenden, Hertfordshire.

BANTAMS (Silver-laced).—Commended, Hon. Mrs. W. Vernon, Wolseley Hall, Rugeley; G. Bradwell, Southwell, Nottinghamshire; T. H. D. Bayly, Ickwell House, Biggleswade, Bedfordshire.

BANTAMS (White).—Commended, W. Elkington, Lichfield.

BANTAMS (Black).—Highly Commended, Hon. Mrs. W. Vernon, Wolseley Hall, Rugeley. Commended, Miss M. A. S. Perkins, Sutton Coldfield.

BANTAMS (Game).—Highly Commended, Hon. Mrs. W. Vernon, Wolseley Hall, Rugeley; Hon. Mrs. Colville, Lullington, Burton-upon-Trent; Mrs. G. W. Moss, The Beach, Liverpool; Mrs. R. Swift, Southwell, Nottinghamshire; E. Hall, Bingley Hall Tavern, Birmingham; W. B. Mapplebeck, 6, Bull Ring, Birmingham; R. E. Ashton, Limefield, Bury Lancashire; W. S. Forrest, Eagle Cliff, Greenhithe, Kent; T. Johnson, Runcorn. Commended, Mrs. R. Swift Southwell, Nottinghamshire; W. Dable, Farnsfield, Southwell, Nottinghamshire; W. S. Forrest, Eagle Cliff, Greenhithe, Kent.

GEES (White).—Commended, W. G. K. Breavington, Vicarage Farm, Hounslow; W. Winterton, Wolvey Villa, Nuneaton.

GEES (Grey and Mottled).—Commended, Rev. W. Mousley, Ashby, Welford.

DUCKS (White Aylesbury).—Highly Commended, Mrs. Seamons, Hartwell, Aylesbury; J. K. Fowler, Prebendal Farm, Aylesbury; J. K. Bartram, Bath; J. M. Baker, Dordon Hall, Atherstone; J. C. Forrest, Lower Darwen, Blackburn; J. Price, Londonderry, Bedale, Yorkshire. Commended, J. Mitchell, Green Lanes, Birmingham; J. Weston, Aylesbury.

DUCKS (Rouen).—Highly Commended, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk; G. Daft, Halloughton, Southwell, Nottinghamshire; M. Ridgway, Dewsbury. Commended, Mrs. C. Browne, Withington, Shrewsbury; Miss M. Parkinson, Roxholme Hall, Sleaford; Miss E. Breavington, Vicarage Farm, Hounslow, Middlesex; W. Cox, Brailsford Hall, Derby; J. K. Bartram, Bath; T. Keable, Rowde Field Farm, Devizes; W. H. Denison, Hardwicke Cottage, Woburn, Bedfordshire; Master J. K. H. Fowler, Prebendal Farm, Aylesbury; J. C. Forrest, Lower Darwen, Blackburn.

DUCKS (Black East Indian).—Commended, E. Herbert, Powick, Worcestershire; F. W. Earle, Edenhurst, Prescot, Lancashire; Master Dixon, North Park, Bradford; Master J. Burn, 1, East Terrace, Whitby.

DUCKS (any other variety).—Highly Commended, Hon. Mrs. Colvile, Lullington, Burton-upon-Trent. Commended, J. C. Forrest, Lower Darwen, Blackburn; J. Shackel, Blenheim House, Small Heath, Birmingham; E. H. France, Ham Hill, Worcester.

TURKEYS.—Highly Commended, Mrs. Fowler, Prebendal Farm, Aylesbury; Right Hon. Viscount Hill, Hawkstone, Shropshire. Commended, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk; J. Parkinson, jun., Roxholme Hall, Sleaford; J. Coxon, Freeford, Lichfield; D. R. Corbet, Sundorne Castle, Shropshire.

TURKEYS.—Highly Commended, W. Dolby, Syston Hall, Grantham; Miss J. Milward, Newton St. Loe, Bath; Mrs. Fowler, Prebendal Farm, Aylesbury.

PIGEONS.

Pigeons muster in strong force, and the several varieties are well represented. The silver cup, value five guineas, for the best three pens of *Almond Tumblers*, *Carriers*, and *Powters*, was awarded to Miss Clara Adkins, of The Lightwoods, Birmingham, for three very fine pens, the Powters being remarkable for length of body and limb, and otherwise particularly fine birds. The *Jacobines* in the pen which gained the cup for the best three pens of *Fantails*, *Nuns*, and *Jacobines*, are very excellent birds. The *Carrier* class shows an improvement upon those exhibited last year, though there is still room for further progress in this variety. The *Almond Tumblers* are about an average class, though there are fewer indifferent birds shown than on former occasions. In breeding *Balds* the great difficulty is to obtain a clean cut round the head; this is particularly noticeable in the present exhibition, as there is scarcely a pen in the Show which shows this point. The *Beards* are of average merit; and the *Jacobines* an excellent class. *Fantails* are an exceedingly good class. Pen 1,419, which is commended by the Judges, appears to have lost the prize from one of the birds having a turned head; and great diversity of opinion seems to prevail as to

whether turned heads are admissible or otherwise: some persons are of opinion that they form a point of merit, while other fanciers consider it a disqualification. It would, therefore, be advisable that some competent authority should settle the matter by laying down a definitive rule. In the *Trumpeter* class, Mr. Adkins gained the prize with a pen of beautiful splashed birds. This variety now so generally obtains the prizes in preference to the white ones, that many Pigeon-fanciers imagine it would be desirable to have a separate class for the white. *Powters* show no decided improvement; the red are almost all bad in colour, although they are very meritorious in other respects. Mottled *Tumblers* are increasing in number, though they are still too large. The class for *Owls* was an exceedingly fine one, the Judges declaring it to be one of the best classes they had ever seen. The *Nuns* are also an excellent class, and so great is the merit of the different birds exhibited, that the Judges had no small difficulty in coming to a decision. The *Turbits*, although very superior in other points, are defective in colour; the prize pen is very excellent. *Archangels* are of superior merit, and *Barbes* are very fine. The prize pen in this class, which was claimed for ten guineas, contains a pair of unusually fine birds. *Runts* are of a very large size, the prize pen being as heavy as some of the Bantams exhibited in the poultry department, weighing 4 lbs. 11 ozs. The class contains many birds of superior merit. In the class for any other variety, the awards fell to two pens of *Magpies*. The other varieties exhibited in this class are *Laced*, *Swallow*, *Frillbacks*, and *Scanderoons*,—all very noticeable specimens. On the whole, the show of Pigeons is greatly superior to that of last year, both in number and merit, many pens containing birds presenting all the points which Judges and breeders require.

SILVER CUP.—*Almond Tumblers*, *Carriers*, and *Powters*.—Miss C. Adkins, The Lightwoods, Birmingham.

SILVER CUP.—*Fantails*, *Nuns*, and *Jacobines*.—E. R. Maddeford, Staines, Middlesex.

CARRIERS.—First, Messrs. W. Siddons and Sons, Aston, Birmingham. Second, A. Wigley, Rose Hill Farm, Nottingham. Commended, Mrs. E. A. Lingard, Birmingham.

ALMOND TUMBLERS.—First, Master M. Rake, Bristol. Second, G. J. Horner, Charlotte Street, Hull. Highly Commended, J. T. Lawrence, Liverpool. Commended, Mrs. E. A. Lingard, Birmingham.

BALDS.—First, F. Esquillant, 346, Oxford Street, London. Second, E. A. Lingard, Hawkesley Hall, King's Norton. Commended, E. A. Lingard, Hawkesley Hall, King's Norton.

BEARDS.—First, J. W. Edge, Aston New Town, Birmingham. Second, H. Adkins, Edgbaston, Birmingham.

JACOBINES.—First, E. R. Maddeford, Staines, Middlesex. Second, F. Esquillant, 346, Oxford Street, London. Commended, J. Percivall, 13, Queen's Row, Walworth, Surrey.

FANTAILS.—First, Miss J. Milward, Newton St. Loe, Bath. Second, C. G. Hill, Colville Street, Nottingham. Commended, H. Adkins, Edgbaston, Birmingham; J. T. Lawrence, Liverpool.

TRUMPETERS.—First, T. H. Adkins, The Lightwoods, Birmingham. Second, Mrs. Jones, High Street, Fulham, London. Commended, Master J. E. Mapplebeck, Moseley Road, Birmingham; G. Goore, Aigburth Vale, Liverpool.

POWTERS OR CROPPERS.—First, J. Smith, 9, Sale Street, Cambridge Terrace, London. Second, T. H. Adkins, The Lightwoods, Birmingham.

MOTTLED TUMBLERS.—First, A. Wigley, Rose Hill Farm, Nottingham. Second, J. Smith, 9, Sale Street, Cambridge Terrace, London.

OWLs.—First, E. Worrall, Knotty Ash House, Liverpool. Second, T. H. Adkins, The Lightwoods, Birmingham. Highly Commended, W. Smith, Kent House, Halifax; E. R. Maddeford, Staines, Middlesex. Commended, F. Esquillant, 346, Oxford Street, London; A. Pressdee, Belgrave Street, Birmingham. (The best collection of this class the Judges have ever seen exhibited.)

NUNS.—First, Master M. Rake, Brandon Hill, Bristol. Second, Master J. E. Mapplebeck, Moseley Road, Birmingham. Commended, Miss E. S. Adkins, The Lightwoods; Miss J. Milward, Newton St. Loe, Bath.

TURBITS.—First, Miss E. S. Adkins, The Lightwoods, Birmingham. Second, A. Pressdee, Belgrave Street, Birmingham. Commended, E. R. Maddeford, Staines, Middlesex.

ARCHANGELS.—First, Miss E. S. Adkins, The Lightwoods, Birmingham. Second, T. Kirby, Hunter's Lane, Birmingham.

BARBES.—First, Miss E. S. Adkins, The Lightwoods, Birmingham. Second, J. II. Craigie, Woodlands, Chigwell, Essex.

RUNTS.—First, S. C. Baker, Beaufort Street, King's Road, London. Second, H. Child, jun., Sherbourne Road, Birmingham.

DRAGOONS.—First, Master H. Felton, Erdington, Birmingham. Second, Miss E. S. Adkins, The Lightwoods, Birmingham.

ANY OTHER NEW OR DISTINCT VARIETY.—First, Mrs. H. Child, jun., Sherbourne Road, Birmingham (Magpie). Second, Miss E. S. Adkins, The Lightwoods, Birmingham (Magpie).

WILTS AGRICULTURAL SOCIETY'S POULTRY EXHIBITION.

THIS Exhibition was held at Devizes, on Wednesday, December 8th. The following is the list of prizes awarded:—

COCHIN-CHINA.—First, J. K. Bartrum, Bath. Second, Mrs. H. Fooks, Whitchurch. Highly commended, J. Garland, Weston Burt. Commended, T. Keable, Rowde. **Chickens.**—First and Second, Mrs. H. Fooks, Whitchurch. Commended, J. K. Bartrum, Bath.

MALAY—First and Second, C. Ballance, Taunton. Highly commended, J. J. Fox, Devizes. **Chickens.**—First and Second, C. Ballance, Taunton. Highly commended, J. J. Fox, Devizes.

SPANISH.—First, J. K. Bartrum, Bath. Second, P. H. Jones, High Street, Fulham. Highly commended, P. P. Cother, Salisbury. **Chickens.**—First, P. H. Jones, Fulham. Second, T. Eacott, Devizes. Highly commended, Rev. C. J. Down, Semington; J. Muspratt, Heytesbury. Commended, T. Lyne, Malmesbury.

DORKING.—First, G. Chadwin, Tollard Royal, Salisbury. Second, R. Coward, Roundway. Highly Commended, Mrs. H. Fooks, Whitchurch; Rev. J. L. Popham, Chilton; C. H. Wakefield, Malvern. **Chickens.**—First, R. Coward, Roundway. Second, C. H. Wakefield, Malvern Wells. Highly commended, G. Hanks, Malmesbury; C. Smith, Durnford, Salisbury; H. Fooks, Whitchurch. Commended, C. Smith, Durnford, Salisbury; R. Coward, Roundway; Miss J. Milward, Newton St. Lowe, Bath.

GAME (any variety).—First, H. Brown, Monkton. Second, S. Elling, Sutton. Highly commended, T. Etwell, Salisbury. Commended, J. J. Fox (Reds). **Chickens.**—First, H. Brown, Monkton. Second, T. W. Phillips, Devizes (Duckwings). Highly commended, Mrs. H. Fooks, Whitchurch; R. Elling, Sutton. Commended, T. W. Phillips, Devizes (Duckwings).

POLAND (any variety).—First, P. H. Jones, Fulham (Silver). Second, T. P. Edwards, Lyndhurst. **Chickens.**—First, P. H. Jones, Fulham (Silver). Second, G. Ray, Lyndhurst (White-crested Black).

HAMBURGH (Golden-spangled).—First, Mrs. H. Fooks, Whitchurch. Second, Rev. J. C. Down, Semington. Highly commended, T. Eacott, Devizes. Commended, Rev. J. C. Down, Semington. **Chickens.**—First and Second, Rev. C. J. Down, Semington. Highly commended, Miss E. S. Perkins, Sutton Coldfield, Birmingham. Commended, W. Clark, Devizes.

HAMRURGH (Silver-spangled).—First, H. Hodge, Hull. Second, J. K. Bartrum, Bath. Highly commended, R. S. Chapman, Codford. **Chickens.**—First, Mrs. Pettat, Ashe Rectory, Basingstoke. Second, J. Garland, Weston Burt. Highly commended, G. Chadwin, Tollard Royal, Salisbury.

HAMBURGH (Golden-pencilled).—First, G. S. Sainsbury, Rowde. Second, J. Martin, Claines, Worcester. **Chickens.**—First and Second, J. Martin, Claines, Worcester. Highly commended, G. S. Sainsbury, Rowde; E. Ingram, Semington.

HAMBURGH (Silver-pencilled).—First and Second, T. Keable, Rowde. **Chickens.**—First and Second, T. Keable, Rowde. Commended, T. Keable, Rowde.

BARNDORO (any other sort, not pure breed).—First, W. Fowle, Market Lavington. Second, H. Blandford, Sanridge. **Chickens.**—First, W. Fowle, Market Lavington. Second, J. Whittaker, Bratton. Highly commended, J. Wentworth, Beckhampton.

BANTAM (any variety).—First, W. Tegetmeier, Muswell Hill, London (Game). Second, J. Garland, Weston Burt (Black). Highly commended, W. Tegetmeier, Muswell Hill, London (Game).

TURKEYS.—First, Miss J. Millward, Newton St. Loe, Bath (French Turkeys). Second, M. Sloper, jun., Bishops Cannings. Commended, R. Franks, Rowde.

GESE.—First, Mrs. H. Fooks, Whitchurch. Second, T. P. Edwards, Lyndhurst. Highly commended, H. Blandford, Sandridge; Mrs. Seamons, Aylesbury. Commended, R. Coles, Norton Bavant; W. Naish, East Harham.

DUCKS* (Rouen).—First and Second, T. Keable, Rowde. Highly commended, G. Hanks, Malmesbury; Mrs. H. Fooks, Whitchurch.

DUCKS (White Aylesbury).—First, G. Hanks, Malmesbury. Second, J. K. Bartrum, Bath. Highly commended, Mrs. H. Fooks, Whitchurch. Commended, J. K. Bartrum, Bath; B. J. Ford, Exeter; T. Walker Heytesbury.

DUCKS (any other variety).—First and Second, Miss E. S. Perkins, Sutton Coldfield (East Indian, and White Call). Highly commended, G. S. Sainsbury, Rowde (East Indian).

Commended, J. J. Fox, Devizes; G. F. Giller, Langley. (The class highly meritorious.)

COCHIN-CHINA.—First, J. K. Bartrum, Bath. Second, T. Keable, Devizes. **Chickens.**—First, Mrs. Simpson, Cirencester. Second, J. K. Bartrum, Bath.

HAMBURGH (Gold-pencilled, and Spangled).—First, T. Eacott, Devizes. Second, G. S. Sainsbury, Devizes. Highly commended, J. K. Bartrum, Bath.

HAMBURGH (Silver-pencilled and Spangled).—First, J. K. Bartrum, Bath. Second, T. Keable, Devizes. **Chickens.**—First, Rev. J. C. Down, Semington. Second, T. Keable, Devizes; G. S. Sainsbury, Devizes.

POLANDS.—First withheld. Second, W. Higgins, Chippenham. **Chickens.**—First withheld. Second, Miss Fox, Melksham.

BANTAMS (Gold and Silver-laced).—Prizes withheld.

BANTAMS (White and Black).—First and Second, J. J. Fox, Devizes. Commended, F. Frankom, Badminton.

CROSS BREED.—First, W. Brown, Uffcot. Second, R. Franks, Devizes.

TURKEYS.—First, Miss J. Milward, Bath. Second, W. Brown, Uffcot. Highly commended, M. Wheeler, Lacock; G. Hanks, Malmesbury. (A very good class.)

GESE.—First, G. Hanks, Malmesbury. Second, Hon. G. Howard, Charlton. Highly commended, R. P. Rich, Chippenham. Commended, W. A. Large, Cleeve.

DUCKS (Aylesbury).—First, G. Hanks, Malmesbury. Second, J. K. Bartrum, Bath. Highly commended, W. Lamb, Purton; Mrs. J. K. Bartrum, Bath.

DUCKS (Rouen).—First, G. Hanks, Malmesbury. Second, T. Keable, Devizes. Highly commended, H. Cole, Frome; W. Higgins, Chippenham. (The Duck classes exceedingly good.)

EXTRA STOCK.—Prize, G. S. Sainsbury, Devizes (East Indian Ducks).

JUDGE—Mr. Edward Hewitt, of Birmingham.

JAMES JOHNSON, OF MANCHESTER.

THIS man, pretending to be a Quaker, has endeavoured to obtain fowls of Mr. Ray and others. He is well known, and Mr. Ray wisely warns everyone "to look after these Manchester gentry." It would be difficult to convict them criminally; but everyone, as Mr. Ray did, can ask for prepayment, or a good reference. When this is done, that "respected friend, James Johnson," is never again heard from.

THE COMING PIGEON SHOW.—Many of our readers are no doubt aware, that a great show of Fancy Pigeons is about to take place in Halifax. To give some idea of the importance of this exhibition, we may state, that there are no less than 400 entries. This out-numbers the entries at the great Crystal Palace Show (the largest yet held in England), which had 385 entries. The Birmingham Show, held on the 1st inst., had only 223 entries. The contributions to the Halifax Show are from Dundee, on the north, to Somersetshire, on the south. We learn that the arrangements are excellent, and, altogether, the show will be unique, and one of the most beautiful ones ever yet placed before the public.—(*Halifax Courier*.)

OUR LETTER BOX.

NOTTINGHAM CENTRAL POULTRY SHOW.—From the continued depression of trade in the Midland Counties, and particularly at Nottingham, the Committee of the Nottingham Central Poultry Association have deemed it desirable to postpone their Show for the present.

CREWE POULTRY SHOW.—*Mr. G. Boothby* says, that he has repeatedly applied for payment of two prizes awarded to him for Pigeons at this Show, but can obtain no reply. This surely must be an oversight of the Secretary; but we have had another letter with a similar complaint.

COMB OF DORKING COCK (J. F. N.).—The only objection to a *very small comb* is, that it takes away from the majestic appearance of the bird, and is not, as a rule, an indication of a large breed. But, if we had to choose between a very large one, falling over from its own weight, and a very small one, we should, without hesitation, take the latter. The truth is, that the comb, save that it should be upright, is not a great point in a Dorking cock. The sprig on the comb of which you speak is quite immaterial, and would not be considered, even if it were noticed. It is common to many breeds,—Spanish, for instance. From them, it is removed by cutting when young, as it is a serious fault in that breed; but in Dorkings it is not of the slightest consequence.

DUCKS WITH ERECT QUILLS (F. Drake).—It is not uncommon for Ducks to come with twisted flights. We should consider such to be a disqualification. Rouen Ducks should be the counterparts of Wild Ducks. In these birds, there is a white mark, with the azure on the wing; but it should not show as a white stripe. The wing presents a lighter, but not a white one. There should be no other white about the Duck; and a white ring round the neck, or the flight feathers of the wing of that colour, would disqualify,

CHIPPENHAM POULTRY EXHIBITION.

THIS Exhibition was held on the 8th inst. The following is the list of prizes:—

DORKING.—First, J. G. Grimwood, Highworth. Second, G. Hanks, Malmesbury. Commended, J. Phillips, Chippenham. **Chickens.**—First, G. Hanks, Malmesbury. Second, Miss Milward, Bath. Highly commended, Mrs. S. Kent, Newton, Tetbury. Commended, J. G. Grimwood Highworth.

SPANISH.—First, J. K. Bartrum, Bath. Second, E. Lyne, Malmesbury. Highly commended, J. R. King, Melksham. **Chickens.**—First, T. Eacott, Devizes. Second, J. R. King, Melksham.

GAME (Black-breasted and other Reds).—First, Mrs. G. F. Giller, Langley. Second, G. F. Giller, Langley.

GAME (any other variety).—First, G. F. Giller, Langley. Second, J. J. Fox, Devizes. **Chickens.**—First, T. W. Phillips, Devizes. Second, G. S. Sainsbury, Devizes. Highly commended, Mrs. G. F. Giller, Langley.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	DECEMBER 21-27, 1858.	WEATHER NEAR LONDON IN 1857.						Clock befo.Sun	Day of Year.		
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun. Rises.	Sun. Sets.	Moon Rands.	Moon's Age.		
21	TU	ST. THOMAS.	30.050—29.964	54—46	S.W.	.01	6 af 8	51 af 3	43 af 4	16	1 41	355
22	W	Diosma ericoides.	30.200—30.970	56—50	S.W.	—	7 8	51 3	16 6	17	1 11	356
23	TH	Eutaxia myrtifolia.	30.341—30.292	57—43	S.W.	—	7 8	52 3	18 9	19	0 11	357
24	F	Fuchsia serratifolia.	30.381—30.293	53—42	S.W.	—	7 8	52 3	18 9	19	0 11	358
25	S	CHRISTMAS DAY.	30.315—29.238	55—26	S.W.	—	8 8	53 3	42 10	20	after	359
26	SUN	I SUNDAY AFTER CHRISTMAS. ST.	30.339—30.278	46—36	W.	—	8 8	54 3	morn.	21	0 48	360
27	M	ST. JOHN EVAN.	[STEPHEN.] 29.364—29.323	44—24	N.	—	8 8	54 3	1 0	(C)	1 18	361

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 43.4° and 31.4°, respectively. The greatest heat, 58°, occurred on the 25th, in 1827; and the lowest cold, 9°, on the 22nd, in 1855. During the period 107 days were fine, and on 89 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

CAULIFLOWERS.—In very mild weather, like the present, the glasses may be left off night and day, to prevent them from being drawn up weakly. Divest the plants of dead leaves, and keep a sharp look out for slugs.

CELERY.—As it still continues to grow, it will be necessary to earth-up, that it may not be injured when frost sets in.

HEDGES.—*Quick* is sometimes used to form the outer fence of gardens: it should now be trimmed to slope regularly to a sharp point at the top. Unhealthy shoots, that are liable to the attacks of insects in the summer, are the consequences of late pruning in the spring; and nakedness at bottom is occasioned by allowing the top to overhang.

LETTUICES should be treated in the same manner as advised for *Cauliflowers*.

MUSHROOMS.—Horse-droppings should now be saved for spring beds. This is the best season for collecting them, as horses have a more dry food than during the summer.

PARSLEY.—As it is doubtful whether it may be protected by hoops and mats, it is the safest plan, where there is a regular demand for it, to take it up, and to plant it in pots, or shallow boxes, and to place it under protection; or, what is better, in any place where there is a little heat.

RHUBARB and SEA-KALE.—Keep up a succession of these most useful esculents, by covering them in the open ground, or by potting, or planting, them in soil in any place where a heat of 60° could be maintained.

FRUIT GARDEN.

CHERRIES, PEARS, and PLUMS.—These trees, when in an unhealthy state, are generally infested by a scale insect, which should be destroyed by a mixture of softsoap, tobacco-water, and lime, well washed into the crevices of the bark, and all parts affected.

FIG TREES.—Protect, when severe weather sets in. The branches should be unnailed from the walls, and five or six branches tied into a bundle: ropes of straw, or hay, wound round them, will be a sufficient protection, where mats are not at hand.

FRUIT TREES.—Finish root-pruning, or transplanting, as soon as possible. Secure with stakes any standards that have been recently moved, or root-pruned, to prevent them from being loosened, or injured, by high winds.

FLOWER GARDEN.

CALCEOLARIAS.—Should the weather continue mild, all cuttings that are rooted may be potted off into small pots, but kept close in a dry frame until they have made fresh roots. They are very susceptible of injury from heat or damp.

CARNATIONS and PINKS.—As rabbits are apt to attack them in severe weather, it may be worth while to try Mr. Rivers' plan of dipping small, square pieces of cloth

into brimstone, tying them to sticks, and inserting the sticks in the ground round the beds.

LAWNS and WALKS.—Keep them free from fallen leaves, sticks, &c., and roll them occasionally in dry weather.

PANSIES.—At this season, worms are apt to be troublesome in the lately-planted beds. A little lime-water, in a clear state, if poured over their casts, will speedily relieve the plants of their presence.

PITS and FEAMES.—At this dull, foggy season, when the days have dwindled to their shortest span, the plants in these structures will require daily attention, to free them from dead leaves and mouldy flower-stems, that, if neglected for a short time, extend mouldiness like a plague-spot, and contaminate everything they touch. All fresh and straggling growth should be checked, by pinching out the tops of the shoots with the finger and thumb. Watering should be avoided as much as possible, as it is even better to let a plant flag a little than to have it saturated at the root. The principal objects should now be—to have a dry atmosphere, a free circulation of air in favourable weather, as much light as possible, and a supply of water limited to the smallest quantity, to keep them from flagging.

POLYANTHUSES.—Remove any blooms that may appear now, and keep all the pots, of everything in frames, free from drip.

ROSES.—Protect the more tender varieties at once, if not already done, as it is most hazardous to delay it any longer at this variable season of the year.

SEEDS.—Cones of *Cedars* and other *Coniferæ*, and the seeds of choice shrubs, that the remarkably fine summer and autumn of this year produced and ripened, should now be gathered.

TEES and SHREUBS.—Although the perfectly-hardy sorts may be planted in mild weather, in well-prepared ground, of a dry nature, we would advise to postpone the transplanting of all such as are known not to be perfectly hardy, and also large evergreens, until the weather becomes mild in spring. We would say, plant not at all in ground of a clayey nature, and in an unfit state, at present, until it is deeply dug, or trenched, and exposed to the action of the atmosphere during the winter. By such means it will be brought into a fit state for planting in the spring.

WILLIAM KEANE.

TRITONIA AUREA.

THIS was the fourth division of the subject I had in hand the week before last. I left it out then, because it was too long; but it is too important to let it stand over until the new year.

Fifteen months since, I thought one of the experiments in hand would show the reason why an *Ixia*-like bulb—as this *Tritonia* is—could not be sold as cheap as my other *Tritonia*, or *Ixia*; and when I said, this autumn, that it could be sold as cheap as any *Ixia*, I was quite sure of the fact. But I put the subject in a different

light, on purpose to raise a discussion,—a honest, fair opposition to my assertion, which was founded on that experiment.

The subject could not have taken a better turn. One of our readers applied to his nurseryman for the bulb, at my price. It could not be had for four times the sum. He tried another, and a third; but it was all the same tune. They could not "do" it at the price. That fact got abroad all over the kingdom, and no one seemed to see his way to a right understanding of my price—at least, no one came forward to say he could sell it so cheap; therefore, I conclude no one had taken the Experimental Garden way of treating the bulb.

The way by which I arrived at that conclusion, was, of itself, an experiment on the trade worth five pounds in the books. But I shall not push for the money until it is clearly and unanimously acknowledged by the trade, and by the public, that the experiment was worth three times the sum.

Well, then, my experiment on the bulb goes to prove, that every one who has grown *Tritonia aurea* in this country, or on the Continent, or in America, has done so in a way which is diametrically opposed to its natural way of growth; and it also proves, that our own cultivators are the best gardeners under the sun. In no other country could this very beautiful bulb have lasted seven years, without becoming extinct, under the treatment. But I must say, that I never saw but one healthy plant of it in bloom till I saw my own, and that one was in the garden of the Horticultural Society the year before last. I much question if there are three gardeners in the kingdom who have seen it one half so good as that plant was; but that plant itself may be excelled in the hands of any one who can grow an *Ixia* or *Sparaxis*, by going the right way to work. It is only fair, however, to state the fact, that I should be just as likely to fail with these pretty little bulbs as the rest of us, if I had begun their cultivation with flowering bulbs, or at the time it first came out. That its cultivation had been hitherto a dead failure, is sure enough—at least, within twenty miles of London; otherwise, we should see it at all the September shows, if not in July; but September is its natural time to begin flowering in our climate, and it blooms freely till Christmas. They have it now nearly over, by the score, at the Experimental Garden, and no *Laelia cinnabarinus*, or any yellow in the whole race of Orchids, is more rich than it has been during these dull months. The old *Golden Lotus Chrysanthemum*, which I mentioned last week, from Mr. Salter, has, perhaps, the richest tint in that race; and when its natural cast of incurving the florets is assisted to perfection, in the hands of the dressers, perhaps no *Chrysanthemum* was ever seen so beautiful as it then appears; but compare it to the *Golden Tritonia*, in bloom at the same time, and the *Golden Lotus* will be a mere foil to it. Such is the richness of this most extraordinary bulb when properly grown; and that it is fully as extraordinary as that, may be imagined, when I say that no other bulb in Africa, or in all the world,—as far as we know,—is like it in natural habit. Can any one of our readers tell the exact locality where it was found in Africa? Like *Sida grandiflora*, which only inhabits the margins of a few muddy hollows on the top of Table Mountain, the extent of its locality must be very limited. I think Masson found it on a "nor'-west" journey, considerably to the left of Dr. Livingstone's route from Cape Town to Coloberg, a tract of country which has been little botanised since; for several of Masson's bulbs have not been sent home from his day to this. How is it, that of all the mountains of the globe, *Sida grandiflora* could only exist on the top of one, at the extreme limits of the old world? But *Sida* is not a true bulb, though very like one above the surface; and *Tritonia aurea* is not only a true and perfect bulb, but one of a family, the most numerous in South Africa; and yet it differs from them all, as widely as the poles are

asunder; hence, my authority for calling it a most extraordinary thing.

All *Ixiias*, and *Ixia-like* bulbs, in cultivation, grow, with us, from the middle, or end, of September, to the end of May, or thereabouts, and rest for the summer season,—except one, and that one is *Tritonia aurea*, which is an evergreen bulb, and grows all the year round! Yes, it grows all the year round, and is an evergreen as surely as the common Laurel is! No wonder, therefore, that we never saw it in good health, three months running; but very extraordinary that it did not slip through our fingers altogether before now; and more extraordinary still, that it did not sell at one half-guinea the root, instead of threepence, or fourpence, which, I believe, is the price I put on it. But, if I can show that it may be grown and sold for profit, at one penny the bulb, surely "GREENHAND," will not grudge to pay over that little balance between us. As for the trade, I know their liberality, and I assure them, that the heaviest of the Dutch shall never be able to compete with the British, in bringing down the price of this bulb to the level of my price, because the frost is so much more destructive to it in Holland, than in England.

Even in our climate it will not increase so fast as the call for it will run, without the protection of a cold frame. But a two-light box of it,—say, five feet by eight feet,—planted with flowering bulbs, at four, five, or six inches apart each way, would produce a thousand bulbs in two years, if not double that number. The glass is to be wholly off, every day and night in the whole year, except during frost; but the frost must not nip the smallest leaf of it. It makes less roots than any other *Ixia-like* bulb; yet, I believe, it requires more water in summer than any of its race. I also believe, that for the roots to be dry for two hours together is all but fatal to the increase of new bulbs: when it is in bloom, it needs just double the quantity of water requisite at any other time, and that is what no other bulb in cultivation can bear with impunity. Is it not, therefore, a very extraordinary thing?

But by far the most extraordinary part of the story, revealed by our experiments, remains to be told. It has actually the habit of a Raspberry bush; and if our Raspberries were evergreens, some people could see very little difference between the two plants, except size. The canes of last season would remain green during the winter, and would keep green till the flower and fruit were over, and a vigorous progeny were up as high, and as green as themselves, to succeed them. Would you not wonder to hear of an evergreen Raspberry bush, in a pot, supposing such a thing to be common, being turned over on its side, in an orchard-house, and remaining dry for three or four months every year? I know I should; but I can conceive a state of root to the Raspberry bush, which would enable it to endure even that hardship, and yet be able to push up a few more canes to keep the pot going, though not enough to part and give away, or sell, for love or money. That state of root this *Tritonia* has, in an eminent degree; and if it had not, it would have been many a degree from our shores by this time.

From the first day I saw this bulb in bloom, I had a great desire to fathom the reason why it looked so bad with the best growers in the country. At last, two years back, a Fellow of the Horticultural Society sent me a large packet of seeds of it—the very thing I wanted. From this, I afterwards learned that it was by means of seeds and seedlings that the plant was kept in cultivation, and not by offset bulbs, like others of the *Ixia* tribe. The seeds were divided into two portions, and sown in two large pots, just this time two years since, or a little earlier. They were kept from the frost, and no more, nothing being more injurious to any plant of that race than artificial heat, or stimulus. The seeds did not sprout till the following March; but they were examined ten times during the interval, in order to watch and study the plants from their very birth. By the end of May the

seedlings were three or four inches long; and both the pots, with the balls entire, were turned out, and planted in a very light, free, deep border—an useless precaution, as nine inches deep answer just as well for the bulbs. They were watered every day through the summer, and examined at the roots once a-week. In September, a few of them made flowering shoots, and bloomed nicely. But, just before they opened a flower, a new move took place beneath the surface. Henceforward, to the end of October, there was a daily examination of the new move, and a prettier sight was never witnessed in the growth of a plant. Five or six white points, sharp as needles, issued simultaneously from the side of each little bulb, a little above the roots. Each point kept rising and extending sideways, and, at three-quarters of an inch in length, each made a stop of two days. On the third day, I could see progress from a joint, exactly as we see on a large scale in the Strawberry runner. At an inch from the joint, another stop of shorter duration, and a second joint; then a third joint of the same length. At this stage, the first length began to get clothed with scale-like bodies—an imitation of sessile leaves—underground. By the end of October, the sixth joint was made, and all were furnished with scales, and the point gaining daylight on the surface. Three weeks after that, each sucker, or runner, was above ground, and looking like a seedling. The last joint beneath the surface beginning to swell at this stage, a few of them were cut below the last joint, and planted close to a wall, where they were glassed over, and carefully protected and examined through the winter. But they made little progress, either below or above ground, till the warm weather at the end of April. After then they grew rapidly, and bloomed this autumn. It was thus made sufficiently clear, that there is no rest for this plant. The two balls were lifted entire, and put into 12-pots, with some hundreds of these runners hanging out all round the ball, and very few roots indeed, and those almost as fine as Rhododendron roots.

The orders were, that these plants must be kept growing all the winter. They were so; and at the end of April one of them was turned out from the cold pit, with Japan Lilies, and both kinds were half plunged, and had the same treatment the whole time, out in the open air. The Lilies began to bloom three weeks before the Tritonias; but the Tritonias lasted in the conservatory till now, and they are not quite over yet. The second pot was set apart, in April, for another season's experiments: some roots were taken from it in May, to be potted, and some to be planted singly; some to be kept growing, as in the first year; and some to be left to dry, after blooming, as is usually done. Ten degrees of frost merely pinched the leaves, but fifteen degrees completely killed them down to the surface. The big ball was then lifted, and every bulb in it, young or old, had long strings of these jointed runners, none of which had the frost reached. The whole ball was now separated into single bulbs, each with four, five, or more, runners, carefully preserved. Most of these were planted in shallow boxes, only four inches deep, and only round the sides and ends, with the runners running inwards. Then the whole looked like so many Lilies of the Valley, fresh set, without being covered. But these will lose three months' growth now by having the old leaves killed.

I put three dozens of them into a box, and took them to Kew, to Mr. Craig, the flower-gardener there. In ten words I told him all that you know of them now, adding, —No one need ever grow these bulbs in pots again: they will do better in shallow broad pans, like Achimenes, as the roots are few and fine, and want space for their travelling runners. As long as they would look healthy, and bloom well, in these pans, I would not think of turning them out, or dividing them. When they are planted out, to remain for good in the open air, I would have coal ashes, or some such covering, over the ground, to keep the frost from the young runners, for they are the

means by which the bulbs increase so fast. Each of them, and, I believe, each joint of each runner, will make a plant and offset bulbs; but of that I am not quite sure yet. The dried roots made no increase. D. BEATON.

MAKING THE MOST OF CONVENIENCES.

CUCUMBERS, MELONS, POTATOES, AND FLOWERS IN MAY.

"I very much want your advice on a point or two; but, before I put any questions, let me tell you what conveniences I have. First, a small stove (flue-heated), twenty-two feet by twelve feet; second, a span-roof greenhouse, twenty-seven feet by eighteen feet; third, two three-light frames, one single, two boxes without sashes, and a brick pit (span-roof), about twenty feet by six feet, heated by the return flue of my greenhouse.

"I have a very good collection of Fuchsias and Geraniums—at least, I enclose my list, and shall be glad of your opinion on it. I have, also, the germ of a good collection of Ferns, besides Azaleas, Cinerarias, pot Roses, Achimenes, Gloxineas, &c. An anticipated wedding makes me anxious to have as many nice things as I can early in May. My Fuchsias, Geraniums, and pot Roses,—at least, the best of them,—should not be ready before our local exhibition in July; but for the rest, how must I act? Likewise, if possible, I wish to have some forced Potatoes, Cucumbers, and Melons, by the time I mention. How must I manage? Could I manage the Potatoes in the unglazed boxes, covering them with straw hurdles? or would you attempt them in one of the three-light frames? or in one of the divisions of the brick pit? Where, too, would you place the Melons and Cucumbers? I should say, stable-dung and tan are no object: of both we can have as much as we want."—M. A.

THE depth or height of these separate structures is not given—a matter of some importance, more especially as we are informed that there will be no want of plenty of dung and tan. Neither are we informed if any part of the stove could be used for forcing purposes—also a matter of some moment, as is likewise its structure, as to platforms or conveniences. I will suppose that it is not desirable to use too much fire heat, for the sake of plants growing in it, until, at least, the days lengthen considerably, in February or March. I almost fear to give advice to a person of such experience, and especially when he has such a second edition of the "Doctor's Box" for an assistant. Many other readers may not be equally experienced, and they may be benefited by a short outline of how I would act in such circumstances, whilst our "M. A." may lose nothing by comparing our ideas with his own, the former being merely the recollections of previous practice in similar circumstances.

The first thing, then, to which our attention would be immediately directed, would be the one-light box. As heating material is abundant, I would not spare it, but would have as much dung thrown together and properly sweetened, as would make a bed three feet high at back, and two feet and a half in front, and so long and wide that there would be eighteen inches of bed all round the frame. Twelve inches, at least, of the top of this bed, might, with great propriety, be well-sweetened, heated tan; and if that is sweet, there will be less danger from the dung below it not being so perfectly sweetened. Such a bed set about now, will be fit for sowing in, at farthest, by the first of January, or shortly afterwards. Here I would sow the Cucumbers and Melons that are esteemed the most, but rather avoiding the larger-sized of the latter: the *Victory of Bath* and the *Golden Ball* are generally esteemed, and ripen early, though not so early as the *Cantaloups*; but few will eat them now. Of course, such a bed will require covering well at night; and if there is a waterproof material to go over all, and a contrivance to take the water from the front, that falls on the glass, the inside will be kept all the more comfortable and warm. Keep the seed-pots near the glass after germination has taken place, and pot off singly into small pots, as soon as the first rough leaf appears, keeping the plants at no great distance from the glass. Give

them from 65° to 70° at night, and 10° more from sunshine, with fresh air as much as they will stand, and which will not lower the temperature injudiciously. As the plants grow, give them larger pots. It will then be necessary, perhaps, to lower the bed inside, in order to give room, to the Cucumbers especially. But the requisite healthy temperature may easily be maintained, by banking up the outside of the frame, above the eighteen inch, or wider margin, with hot dung, or hot tan, and with a thatching of litter, to keep the heat in, and the wet out.

Now, to make doubly sure, we will have two strings to our bow,—say, half of the stove, if at all convenient, for two other plants of Cucumbers, and ditto of Melons. The plants intended for the stove we should treat differently from those intended for the frame, which would be stopped in the usual manner, when the plants had made three or four rough leaves. When those intended for the stoves were stopped, I would only allow one shoot afterwards to grow, picking out the incipient buds of others as fast as they grew. The reason is, that when that single shoot, coming from the plant previously stopped, was vigorous, and had its point nipped out again, almost every lateral shoot left, or allowed to grow, would be next to certain to show fruit. This one-light frame would enable you to have sufficient plants for the half of the stove, and for the six lights of framing.

The Cucumbers would grow much the fastest, and, therefore, would want shifting oftener. The hotbed for them might, therefore, be first prepared on much the same principle as the seed-bed, only it might be from three to six inches less in height. As the heat rises kindly, place a ridge of rich, sandy loam—such as sandy loam and well-aerated leaf mould—along the centre of the bed,—say, twenty inches wide, and the same in depth,—with slabs, or slates, along the sides, to prevent the roots extending farther; and then fill up between these slabs, &c., and the back and front of the frame, with sweet, heating tan, to the same height as the soil in the centre. As soon as the soil gets nice and warm, turn out the strong plants into it, two or three in a light; one would do in summer, but for early work I prefer more plants. The curbing of the roots will encourage fruitfulness. The moving of the tan, at first now and then, will raise a nice sweet steam about the plants: there will be little risk of too much bottom heat, whilst the layer of tan round the soil will secure, with the fermenting material below, quite enough until far on in the summer; whilst banking up the frame outside with fermenting material and judicious covering will secure the necessary amount of top temperature.

From turning out such plants in the end of February, under such management, we have had plenty of fruit by the middle of April. The removing of the Cucumber plants would give more room to the Melon plants, and they might remain in the single-light frame, until they were strong plants, in 48 or 32-pots; and then the other frame, being got ready in a similar way, but with two-feet wide spaces all round it, the plants might also be turned out into a ridge of well-aerated loam. If banking-up and covering are duly attended to, and the frame is about two feet in depth at least, to permit of that banking-up, Cucumbers and Melons may be got as early in such frames, if the spring is clear and open, as in the stove, or frequently sooner; but in dull, cold springs, those having the advantage of fire heat will generally come in first.

If the stove had been heated by hot water, or there was the convenience of a bed in it, where a hotbed of tan near the glass could be formed, then the plants might be raised there at once. Our reason for making use of the hotbed is two-fold:—first, not to interfere with what is in the stove at present; and secondly, because, in all our experience, we have found that such plants grow more rapidly and healthily in their young state in such a hotbed, than in a place heated merely by a flue. By the end of February, or the beginning of March, the sun is so

much more powerful, that strong healthy plants, turned out into such a flue-heated house by the time specified, and a fair amount of moisture kept up in it, would grow away freely and healthily. If such a house were appropriated to Cucumbers and Melons alone, both could be gathered from it by the desired time, either by sowing in a hotbed, as advised, or making a hotbed of tan in the stove. If this were resolved upon, the frames might come in for secondary crops, or more Potatoes and Radishes in the first place. On the supposition that early crops are to be grown in the frames, just to make doubly sure, I would devote the warmest end of this stove to two or three plants of Melons, and the same number of Cucumbers, and would grow them in pots about fifteen inches in diameter.

These pots should be set close to, but not on, the flue, and the soil used should be well dried and warmed before using. I need not say, that drainage should be well attended to, and that, for some days after moving the plants here, an extra degree of moisture in the atmosphere should be kept up, that no check might be felt on the moving from the moist hotbed. To make this room, a few of the hardier plants from the stove might be moved into the warmest end of the greenhouse, and a few more again, as the Cucumbers, &c., grew freely. If necessary, a partition of thin glazed calico might separate the Cucumbers and Melons from the other plants. When the frames produced freely, these plants might be removed, or the arrangement followed deemed most advisable.

I do not know the depth of your span-roofed pit, heated by a flue; but, if deep enough to permit in one end a bed of two feet of tan, I would propose planting the Potatoes over it in the end of February. To make sure, we would pot a number of Potatoes in January,—say, a middle-sized *Handsworth Early*, or *Ash-leaved*, or a larger one cut in two,—into a 60-sized pot, in sandy soil and leaf mould, leaving only one shoot to each set. These we would place on the ground not far from the flue in the greenhouse, or, if we wanted them earlier, on the floor of the stove. These would soon fill the pots with roots, and by the time the green tops were two or three inches in height they would require transplanting. Of your conveniences, the brick pit would be much better than the unglazed box; and here they might be transplanted into light, sandy soil, at the distance of four inches in the row, and eighteen inches from row to row. To avoid making a fixture in this pit—if wanted for other things—these Potatoes might be transplanted, two or three round the sides of a ten or twelve-inch pot, and kept in the pit until they arrived at maturity, or nearly so, when they could be removed and protected against a fence, with a mat, &c. I find this a very profitable way of getting Potatoes early; and if the pots are not very large, it is easy to turn them up, pick out the large Potatoes, and place the pot on again, without injuring the roots, or the small tubers. A stick put in the pot lets you know where you have been. Such Potatoes—started in pots, and turned out in March, in your frames without glass, but protected—would give you ripe Potatoes by the middle of May, and onwards; but if you had cold, dull weather, they would be behind in time, and far inferior in flavour to those grown under glass. In both cases a slight bottom heat would be in their favour; but it must not be very hot, though continuous—say, about 65°.

If you appropriated part of your stove to Cucumbers and Melons, and had no stove plants in particular, you might fill the other part with French Beans. You might also start Strawberries in your pit and greenhouse, and ripen them off in the stove. Plants placed in the warm end of your pit, in March, kept close there at first, and given plenty of air when in bloom, might be taken to the cold end of the stove after the fruit was set, and be ripened early in May. Part of that pit might also produce an early crop of Turnips, which might also be had

from a temporary hotbed, covered with straw covers or tarpaulin. These are often worth sixpence each, in May. As for flowers, a few extra large specimens of Fuchsias might have a little assistance in the stove, for a few weeks, after they had broken freely; but all the best specimens of Pelargoniums, Fuchsias, and Roses, for July, will be quite forward enough in the coolest part of the greenhouse, or brick pit, and may have a little extra heat when deemed necessary. The Fuchsias you intend to bloom in May should receive but little pruning, and no potting, except top-dressing. The worst Geraniums, as respects specimens, should also be chosen for this purpose: they should be kept in small pots, no extra water given, and manure water applied after the flower-trusses appear. These should be kept at the warmest end of the greenhouse. Your Azaleas will come in time in the greenhouse, with little or no forcing. Cinerarias must be regularly shifted, and kept cool, or they will bloom before May. Daphnes, Deutzias, Cytisus, &c., will be in of their own accord, and so will Wallflowers, single and double. Many annuals—as *Collinsia bicolor*, *Nemophila insignis*, *Clarkias*, &c.—if taken up from the borders now, or sown thinly, would bloom richly in such a pit by May. I need not allude to Stocks, Mignonette, &c. Roses, also, kept in the cool end of the greenhouse, will be nicely in bloom, if placed in such a house about March. Your collection of Pelargoniums and Fuchsias is very good, and will want considerable room to grow large specimens. If I have not hit upon the peculiar wants in your case, I have no doubt that these will be supplemented. My impression at present is, that the single-light hotbed would form your best commencement.

R. FISH.

ASPARAGUS.

It is the season for commencing to force Asparagus, albeit not the planting season; and, as I wish to say a few words about the forcing, I must seize the occasion to offer some miscellaneous remarks connected with its culture.

In all the range of gardening matters, I do not think there is one thing so little understood by the majority as this excellent vegetable. I do not speak here of real gardeners. But if you were to ask, what are the principles which dictate even the cutting of Asparagus? I do not believe that one in twenty could give a rational answer.

But in what vegetable, I should like to know, may we find a greater difference,—as to both quality, size, and general produce,—than in Asparagus? In none, I believe, taking in all these qualities. What, then, is the real secret of high culture in Asparagus? It cannot be a mystery. A genial soil, plenty of manure, deep digging, and, of course, proper after culture,—these are the principal mysteries. But even these important points are not all: one thing yet remains,—if not more,—and that is, how to cut it. In order to render these things familiar to the unknowing, both scientific and practical men must pardon me for turning catechist for a moment. With such permission, I proceed thus:—

- 1st. What soil will suit Asparagus?
- 2nd. Should it be deep?
- 3rd. Should it be rich?
- 4th. When should I plant it?
- 5th. Am I obliged to water it with liquid manure?
- 6th. How long before I can cut?
- 7th. How must I cut it?
- 8th. How long will the beds last?

And this, it must be confessed, is a goodly array of interrogatories; but I must be forgiven for disposing of them in a somewhat summary way.

1st. It loves a free soil—one rather loose than binding; and this should be so compounded, that no stagnation exist, but water pass through it readily. If the soil is not open and free, it must be rendered so by applications, and

by well working. It should not be less than two feet in depth; if three, so much the better. If the subsoil is somewhat retentive, drainage should be had recourse to; and in all such cases the roots should be planted on the surface of the ground, at a high level.

2nd. Depth of soil is most essential: in situations where it is shallow a much greater quantity of manure is necessary. In such cases a very high course of culture should be carried out, at the sides of the beds, to compensate for the want of depth; the alleys must be left wider, and manure buried beneath them.

3rd. It is almost impossible to grow superior Asparagus without much manure, or what is called muck. Artificial manures, however beneficial, will never accomplish this like the dunghill.

4th. The best time to plant Asparagus is, when it has just begun to sprout, in April. The sprouts, however, should not have risen above ground, so as to become greened; as it is better to cover them overhead when planted, three or four inches in depth. Some years back, I used to plant them after they had risen above the surface and become greened; and, as seedling plants always spring above ground before old roots, I felt it necessary to cover them overhead, for fear of late frosts, which are almost sure to nip precocious Asparagus. I found, however, that they, in common with most other things, could not endure covering after becoming green; and that to leave them above ground without, was to have them frost-bitten. All this is obviated by removing the roots when the sprouts are about two inches long, and still white; then, by covering them three or four inches in thickness, they work below the surface uninjured, and their sprouts do not appear above ground until all danger from frosts is over.

5th. There has been much said about using liquid manure during the growing season, and those who want to pet their Asparagus, may give it any quantity when dry, putting a handful of salt to every bucket of water. But since, in general gardening, there are so many rivals in the character of pets, it becomes us, in these times, so to establish things at first, that they need little attention afterwards. There is an old saying, that the first trouble is least, and true, indeed, it is in gardening. There is no garden in Britain where better Asparagus, or more abundant crops are grown, than at Oulton; and yet I do nothing during the growing season in the way of petting them. But my practice is almost self-acting: I feel assured, that by my plan, if the Asparagus beds were not manured for four years after planting, they would, notwithstanding, produce respectable Asparagus in plenty.

6th. Asparagus is best planted at two years old. It should then grow the first summer, and the second before it is cut; and, if cut rather lightly the first season, a first-rate crop may be expected in the year ensuing.

7th. There are two or three ways of cutting Asparagus. One is to cut it on principle, the other is expediency. On principle, the maxim should be, from the beginning of the season, to cut all the very strongest of the shoots for culinary purposes, and to leave all the second and third-rate shoots possible. By this practice, the beds will long endure; but this much may be observed, that the cutting will sooner cease in the summer—the monopoly of so many growing shoots will prevent any succession after the beginning of June. The market-gardeners, in general, cut every shoot they can lay hands on, till near Midsummer; but this is a breeches-pocket affair. Of course, the closer it is cut during the first three weeks, the longer is the succession, as such practice causes every bud to push. However, under all circumstances, by all means leave all the small spray, in order to keep the root in action, and to provide for future seasons. I force a hundred yards of beds every winter, and that intended for forcing is cut lightly; indeed, little of the early is cut. But after the end of May I cut every rising shoot. The principle is this; early shoots organise as early buds at their base,

and *vice versa*. Therefore, the late-made buds are of no use in this case; for as soon as a full crop is gathered, the roots are bundled out to make way for another batch.

8th. How long will the beds last?—To this I may answer, as long as people are unwise enough to keep them. Where Asparagus is forced extensively, the mode of culture is sometimes influenced thereby, as in my case. As I take up my roots to force, I have to replant annually as many as I force; and this leads me into what I may term a five-year course—that is to say, beds planted in April, 1858, make a growth of about two feet, or a little more, in height; in 1859, they produce strong tops of four feet in height; and in 1860, they will be cut for use, on fairplay principle; in 1861, they will produce a splendid crop, and are cut hard; in 1862, they will be cut on the principles described as applicable to forcing; and this ends their life with me.

Thinking that some good people may imagine this a prodigal course of procedure, I beg of them, not only to think of the Asparagus in an isolated sense, but also of this course as only part of a system. I do not expect anyone fully to enter into the spirit of the practice I am about to describe—plans differ so much: but this I will say, that I will fearlessly challenge any man to produce finer crops of vegetables, or more abundant, on the same space of ground, by any other mode whatever. When an old garden has been dug, mucked, and cropped, for nearly a couple of centuries, without any fallow, or rest, it requires a man to step out of the ordinary course of practice, to keep it going. What would some of our farmers say, who talk so much about their three and four course systems, to having their fields in full tillage for nearly 200 years?

But then the question is, with good and experienced gardeners, not only how to grow good Asparagus, but to make it form part of a system for the welfare of the whole garden. This is what I do, and, by the plans I have long established and practised, I have managed to get the whole garden successively trenched nearly four feet in depth.

I may, in conclusion, say a few words about forcing Asparagus. In the first place, it is useless to force old, hard, worn, and ill-used roots. I well remember that, about forty to fifty years since, when I was in the nursery, we used to have extensive orders for roots to force, from gentlemen's gardeners. These roots had to be purchased from the market-gardeners about London; and as those were not the times for distinguishing with any nicety the character of the roots, with regard to their aptitude for forcing, the market-gardeners used to make a good thing of it, by thus disposing of old and exhausted beds. I well remember, when a boy, seeing load after load of these roots tumbled out of the carts, and left laying for days, completely dried up; and, very shortly, came a complaint that the roots could not be made to "break," or shoot up, and no wonder. The fact is, every bud of any account had been cut away for some three or four years, and the plants, or crowns, completely exhausted. Yet they looked huge and monstrous things, as compared with what I term maiden plants, such as I put in a frame the other day: these were all crown, as it were,—clusters of strong eyes crowding each other,—and several, when taken up, nearly a couple of inches in length: in fact, I planted a frame of such, full of vigour, less than a fortnight since, and such is their power, that they are already up, and we have cut this day (November 4th). Therefore, be it understood, that nearly everything depends on the character of the root, as to forcing; one thing alone be marked—take care not to burn the roots in your ardour. They enjoy a bottom heat of 70°, but let 75° be the maximum. At the same time, let the air heat be kept moderate,—say, 45° to 50°,—for on this steady growth the stoutness of the heads depends. My practice is, as soon as the heads are in general through the soil, to cool the bottom heat considerably with water, by which means the heads keep longer without spoiling.

In placing the roots in the frame, we fill in amongst the fibres with old, rotten manure, which has become like soil: the fibres revel in this, and it gives much strength to the "grass," and, also, causes it to develop every bud without hesitation. They cannot remain dormant whilst the plant is feeding so enormously.

Forced Asparagus requires much ventilation. The more air and light it gets when above ground, the finer the heads are, and the higher flavoured. But it must not, by any means, be exposed to a frosty air, or to cutting winds; in other words, it must not be stagnated with cold. If such occur, the heads will, assuredly, become crooked and tough. In watering, I do not use manure water, but simply put a handful of salt in each can of water, which certainly benefits it without injuring the flavour. In frame-forcing, through December, and January especially, it requires very liberal roof coverings. The least frost is fatal to it in an excited state.

R. ERRINGTON.

MEETING OF THE BRITISH POMOLOGICAL SOCIETY.

A MEETING of the BRITISH POMOLOGICAL SOCIETY was held on Thursday, November 11th, at St. James's Hall, ROBERT HOGG, Esq., Vice-President, in the chair. The following gentlemen were elected ordinary members:—CHARLES WARD, Esq., London and Westminster Bank, 246, Strand; C. RATCLIFFE, Esq., National Club, Whitehall Gardens; E. W. COX, Esq., 36, Russell Square, and Moat Mount, Highwood; MR. GEORGE SWAILES, Nurseryman, Beverley, Yorkshire; MR. COOK, Notting Hill; MR. AITON, Enville Hall, Staffordshire.

A large collection of Apples, Pears, and Grapes, were exhibited,—of which all that were ripe received careful examination, as well as did those brought forward from last Meeting, and which had ripened in the interim. Many, however, of those sent to this Meeting, as well as of former arrears, were necessarily postponed, on account of immaturity. This is explained in general terms, that contributors, who receive this report, may not suppose any fruit is neglected because it is not noticed herein.

The Meeting was enabled on this occasion to get through an unusually large amount of business, owing, *firstly*, to the successful working of the resolution of last Meeting relative to the time at which the fruit should be delivered,—the Secretary having been thereby enabled to get the fruit properly arranged and entered ready for the EXAMINING COMMITTEE; and *secondly*, to the said Committee having examined, preliminarily, the greater portion of the fruit, so that the time of the Meeting was not needlessly occupied by unripe or uninteresting fruit. These facts are mentioned, that the members and well-wishers of the Society, who are not able personally to attend the Meetings, may be aware that it is complying in an efficient manner with the increasing demands upon its attention; and that they may be stimulated by this knowledge to aid as much as they can in extending its influence and enlisting additional support.

The Secretary reported, that the Naming Committee had met during the interval between the last and the present Meeting, and had supplied names to portions of twenty-nine collections of fruit sent for the purpose by members and others.

Of the examination of fruit laid before the Meeting on this occasion, the following are the most interesting items of information. Much, however, of that which is collected, especially that derived from the carefully filled-up forms, is intended to be collated with other similar matter, and embodied, in a carefully-digested manner, in the next TRANSACTIONS:—

GRAPES.—MR. WIGHTON, of Cossey Hall, Norfolk, sent a SEEDLING, and therewith a bunch of *Black Hamburg* from the adjoining rafter. The latter was shrivelled

and decayed; while the former, stated to have been ripe three months, was plump, fresh, exceedingly sweet, and in good condition. The object of the shrivelled bunch was to show the comparative keeping properties of the seedling, which, up to the present time, appeared satisfactory; but, to regard it as an acquisition amongst the varieties in cultivation, it was deemed necessary by the Meeting that it should be exhibited much later, and, in comparison with *Oldaker's West St. Peter's*, which it appeared closely to resemble in form of bunch, berry, skin, &c.

Mr. WEAVER, of the College, Winchester, sent two large dishes of **BLACK HAMBURGH**, from the open wall, to show the effect of ringing the branches,—one dish being from a ringed and the other from a naturally-grown branch of the same tree. The former were much larger in berry than the latter, though not quite so well coloured; both were, however, exceedingly fine and good for out-of-door Grapes. They were described as having been grown on *Hoare's* principle.

A. SCRUTON, Esq., brought a basket of **BLACK HAMBURGH** Grapes, from the open wall, and, but for the unquestionable testimony regarding them, they would have been mistaken for hothouse Grapes, so excellent were they in size, colour, bloom, and flavour. They were pronounced the finest specimens of open-air Grapes that had ever come before the Society. These were also reported to have been grown on *Hoare's* principle; the fundamental part of which is identical with that upon which the *Raspberry* is cultivated—namely, inducing the plant each year to produce new branches from the base: these bear a crop in the second year, proportioned to the strength of the main tree, and are afterwards cut away. (This is a general rule, which may be applied to all trees and shrubs,—Roses, for instance,—whose energy in blossoming depends on the strength of their previous year's wood.)

FRUIT EXHIBITED AT THIS MEETING FOR ADVERTISED PREMIUMS.

Class A.—Cox's ORANGE PIPPIN APPLE.—Under this head, three dishes were exhibited—By Mr. GROOM, Slough, Buckinghamshire;—Mr. SPIVEY, gardener to J. A. Houlton, Esq., Hallingbury Place, Essex;—and Mr. BEAUMONT, of the Post-office, Shrivenham, Berkshire. The two latter, however, were totally different from the variety they were sent for; and nothing can better exemplify the necessity in this country of an efficient authority on such matters in the form of a Pomological Society than the fact, that such confusion exists regarding a kind which has scarcely been known, or propagated, till within the last few years. Those sent by Mr. Groom—to which the prize was awarded—were very handsome, and in fine condition. This fruit is oblate, slightly tapering, generally very even in form; eye small, close, and moderately sunken; stalk of medium length and thickness, inserted in a very deep, russet cavity; colour pale yellow, very much fluked and spotted with bright carmine, and tinged with russet over three-fourths of its surface; greatest diameter of a fair average fruit, transversely $2\frac{7}{8}$ inches, vertically $2\frac{1}{4}$ inches, and from the eye to the insertion of stalk $1\frac{1}{4}$ inch; core medium sized; skin very thin; flesh very tender and juicy; aroma powerful and pleasant; flavour very sugary, slightly sub-acid, with an exceedingly pleasant after-taste, much resembling that of *Ribston Pippin*,—than which greater praise can scarcely be given. It was the opinion of the Meeting, that this variety is worthy of being highly recommended to the notice of the public; and that, if it proves to be hardy, a free bearer, and not subject to canker (all which it was testified to be, as far as their experience went, by members present), it will undoubtedly take a place amongst the most favourite varieties in cultivation. But, although pronounced superior in texture to the *Ribston*, it was not considered superior in flavour,

and ought not to be sent forth to the world with more than a just opinion of its merits. Overdrawn representations of the value of any new fruit only lead to disappointment and dissatisfaction. These latter remarks were intended to refer to the opinion given of this kind by the Judges at the *Horticultural Society's fruit show last autumn*, when it was pronounced *superior in flavour to the Ribston Pippin*. As the general public naturally expect that dependance may be placed on the authoritative opinion expressed by SCIENTIFIC SOCIETIES, their officers and deputed Judges should be exceedingly careful in weighing expressions they use, that the confiding public may not be misled thereby: hence, it is better for a Society of the kind to qualify commendation, if the information before them is insufficient, as they can always give additional, or higher, testimony, of the merits of a subject; while they can never reduce an opinion once sent forth. This digression affords a good opportunity of exemplifying the soundness of the system acted up to by the **BRITISH POMOLOGICAL SOCIETY**: everything important is freely examined and fully discussed in open court, an equal part being taken in the proceedings by every member present; and, as the attendance of the Meetings always comprises twenty or thirty of those who have given a large share of their thought and attention to pomology,—including representatives of every class of consumer, dealer, and producer,—the opportunities for impartiality, or mistake, are reduced to the minimum.

Class B.—BEURRE BOSC PEAR.—The exhibitions in this class were very large, but not of first quality, the fruit generally being juicy and sugary, but not melting. *The first prize of £1 was awarded to Mr. STEWART (gardener to H. K. Tompson, Esq., Witchingham Hall, Norfolk), whose fruit was not the largest, but the most melting. The second prize of 10s. was awarded to Mr. WIGHTON (gardener to Lord Stafford, Cossey Hall, Norfolk), whose fruit was very large, rich, and sugary.*

Class C.—GENERAL DESSEET PEARS IN SEASON.—Under this head were twenty-nine dishes, in seventeen varieties, exhibited by eleven growers.

BEURRE DIEL was exhibited (very unripe) by Mr. DIVERS (of Warton House, Staplehurst, Kent), from espalier Pear stocks, on light, rich garden mould, over strong subsoil.—By Mr. SIMPKIN (gardener to W. Donald, Esq., Acton, Middlesex), from standard Pear stock, on light loam, over gravel.—By Mr. PETER GRIEVE (gardener to Rev. E. R. Benyon, Culford, near Bury St. Edmunds), without name, from standard Pear stock, on light, thin soil, over dry, sandy gravel.—Also, by Mr. NEWTON (gardener to G. J. Graham, Esq., Enfield Chase, Middlesex), under the name of *Passe Colmar*, from standard Pear stock, from rich loam, over yellow clay, having gravelly springs running through it, drained four feet deep. The fruit was described as subject to be spotted. It was small for the kind, nearly ripe, very juicy, and a week or ten days later would have been melting and delicious, being sugary and aromatic.—In a mixed state as regards ripeness, by Mr. WIGHTON, being partly from espalier and partly from west wall, re-grafted on old, inferior varieties of Pears. Soil light, artificially enriched, over brown sand and gravel. Stated to be subject to mildew on espalier. The fruit from the wall was juicy, half melting, but not high flavoured.—*Perfectly ripe*, by Mr. STEWART, from west wall; Pear stock; soil sandy loam, over sandy gravel; very large, juicy, melting, aromatic, and high flavoured. Altogether, the best dish of the variety exhibited on this occasion.

SOLDAT ESPEREN (No. 29) was sent by Mr. MOULD (gardener to P. Rose, Esq., Rayner's Farm, High Wycombe, Bucks), from a dwarf standard, on Pear stock; soil strong, tenacious, flinty loam, over impervious, plastic clay; substratum chalk. This is a very delicious Pear, and evidently suited to retentive, calcareous soils. The fruit was large, very juicy, and melting, with a rich, sugary, noyeau flavour; after taste exceedingly grateful

to the palate. It was awarded the first prize of £1 in this class.

WINTER NELIS was sent by Mr. PETER GRIEVE, from east wall Pear stock (soil, see *Beurré Diel*) ; very large, but deficient in flavour. — By Mr. WIGHTON, from espalier (soil, see *Beurré Diel*), rather small, and irregular in shape, but melting, very rich, and sugary ; — and from a south wall, very much larger, juicy, very melting, and excellent in flavour. This dish was awarded the second prize of 10s. in this class. Mr. Wighton mentions that this variety, and this only, is subject, with him, to American blight.

MARIE LOUISE was sent by Mr. WIGHTON, *from espalier (soil, see *Beurré Diel*). Fruit large, russety, and ripe ; very buttery, and melting ; but not quite first-rate in flavour, being thin and watery.

NAPOLEON was also sent by Mr. WIGHTON, from espalier. Not quite ripe, but promising to be very good in flavour.

BEURRE D'AREMBERG was sent by Mr. MELVILLE (of Dalmeny Park, near Edinburgh), from a south wall. Large, melting, juicy, and rich in flavour, but rather acid.—Also, by Mr. GRIEVE (gardener to Rev. E. R. Benyon, Culford, Suffolk), from an east wall ; soil very light, over sandy gravel ; very fine, melting, and juicy ; but very acid.

BROWN BEURRE was sent by Mr. THORNTON (gardener to H. Tempest, Esq., Newland Park, Normanton, Yorkshire), from a west wall, and from a standard ; soil light, over clay ; melting, but deficient in flavour, especially those from the standard.—Also, by Mr. MOULD, from a dwarf standard ; smaller in size, but much more melting and good flavoured.

BEURRE DE CAPIAUMONT was sent by Mr. MOULD, from a dwarf standard. Very large, crisp, and juicy ; sweet, but not so high-flavoured as many examples of the kind which had been laid before the Society during the autumn.

ST. GERMAIN, under the name of *Poire de Pentacost*, was sent by Mr. THORNTON, from a west wall. Medium sized ; flesh breaking, half melting, juicy, and sweet.

SWAN'S EGG was sent by Mr. THORNTON, from a standard. Not quite ripe, but very sugary, and likely to be excellent for that variety a few days later.

GLOUT MORCEAU (unnamed), from a standard ; and WINTER CRASSANE, from a wall, were also sent by Mr. THORNTON ; but both in an unripe state.

BEZI VAET, under the name of *Chaumontel*, which it much resembles in size and flavour, was sent by Mr. GRIEVE, from an east wall. Fruit large, juicy, half melting, and sweet.

TRUITE, or FORELLE, was sent by Mr. SPIVEY (gardener to J. A. Houblon, Esq., Hallingbury Place, Essex), from a pyramid, on Quince stock. Soil rich garden mould, over strong but well-drained subsoil. Fruit large, handsome, melting, and sugary, with a nice aroma.

AUTUMN BERGAMOT was sent by Mr. MELVILLE, from a south wall. Soil light loam, over rocky substratum ; fruit sweet, half melting, and considered good for the locality.

VICAR OF WINKFIELD, under the name of *Van Mons Léon le Clerc*, was sent by Mr. WIGHTON. Large, but not melting. This variety is sometimes good flavoured, but is not to be depended upon as a dessert fruit.

PEARS SENT IN SMALL QUANTITIES.

MR. RIVERS, of Sawbridgeworth, sent :—BEURRE SIX. Half melting, and very juicy, but void of flavour.

POIRE VANDERMOUTH. A large, pale yellow, pyriform fruit, with very juicy and melting, but rather coarse flesh, and moderate flavour.

VICAR OF WINKFIELD. Sugary, but not ripe.

FONDANTE DE COMICE. A small, round, melting fruit ; very juicy, but not high flavoured.

BEURRE BOCHELIER. A large, oblate conical fruit ; juicy, half melting, sweet, and sugary.

MR. WEBSTER (Gordon Castle, Lochaber), sent ROUSE LENCH, under the name of *Hacon's Incomparable* ; and

NAPOLEON. Large, handsome, bright green in colour ; very juicy and melting, but not high flavoured.

RIBSTON PIPPIN APPLES IN COMPETITION.

Six dishes were exhibited in this class, as follows :—

By Mr. NEWTON, from standard. Medium sized ; excellent in texture and flavour. Awarded the first prize of £1.

MR. M'LAREN (Cardington, near Bedford), from an espalier, on light garden soil, over gravel. Very nearly equal to the above. Awarded the second prize of 10s.

MR. THORNTON, from a standard. Medium sized, very handsome and high coloured ; but less crisp and juicy than the above.

MR. WIGHTON, from large bush. Small, but good flavoured.

MR. SPIVEY and MR. DIVERS, from espaliers. Large, but pale, and deficient in flavour.

GENERAL DESSERT APPLES IN COMPETITION.

In this class, thirty-seven dishes, in twenty-nine varieties, were exhibited by fourteen growers, of which the following were the most worthy of remark :—

ADAM'S PEARMAIN was sent by Mr. WHITING (of the Deepdene), from a standard, on sandy soil. Fruit handsome ; flesh tender, and very juicy ; flavour good, brisk, sugary, and aromatic. Awarded the first prize of £1.

CORNISH GILLIFLOWER was sent by Mr. NEWTON. Handsome, well coloured ; crisp, juicy, and rich flavoured. Awarded the second prize of 10s.

GOLDEN RUSSET was sent by Mr. WIGHTON, under the name of *Aromatic*. Very juicy, with rich aroma, and good flavour.

ROSS NONPAREIL, under the name of *Golden Russet*, was sent by Mr. NEWTON, from standard. Small, very russety, juicy ; but sharp in flavour.

SCARLET NONPAREIL was sent, but all unripe, by Mr. WIGHTON, MR. BEAUMONT, and MR. GRIEVE. Those from the latter were very handsome, with a clear skin, and fine colour.

COURT-PENDU PLAT was sent by Mr. GRIEVE, from west wall. Fine, large, and high coloured ; very juicy, but not quite ripe.—By Mr. M'LAREN, from espalier. Large, pale, very juicy, and acid.—By Mr. WIGHTON. Very juicy, crisp, and sugary.

BAXTER'S PEARMAIN was sent by Mr. WIGHTON, from dwarf standard. Large, and handsome ; flesh rather tender, but rather dry ; flavour very deficient.

TEN-SHILLINGS was sent by Mr. WIGHTON. Skin thick ; flesh soft, and rather dry ; flavour rich and sugary, and aromatic.

GOLDEN REINETTE, under the name of *Golden Pearmain*, was sent by Mr. WIGHTON. Dry, and deficient in flavour.

HAMPSHIRE YELLOW, or *King of Pippins*, was sent by Mr. TILEY (of Bath), and by Mr. SWINERD. Large, and bright coloured ; but not juicy, or high flavoured.—By Mr. DOWLING (of Southampton). Very large, much more oblate than usual, and handsomely striped, almost like *Alexander* ; juicy and sweet.—Also, by Mr. SPIVEY, under the name of *Court of Wick*. Juicy, but small, and flavourless. (Those of Mr. Dowling were from a light, warm soil, over a strong loamy subsoil, and from a pyramid. They were sent as *Margil*).

OLD GOLDEN PIPPIN was sent by Mr. NEWTON. Very juicy, and good.

FRANKLIN'S GOLDEN PIPPIN was sent by Mr. DIVERS. Very acid, and shrivelled, from having been gathered too soon.

MARGIL was sent by Mr. SWINERD. Handsome, and fine coloured ; flesh tender, crisp and very juicy ; flavour agreeably sub-acid.

SUDSBURY BEAUTY was sent by Mr. WHITING. Very

juicy and crisp, with a pleasant, brisk, sugary flavour, and an agreeable aftertaste.

SWEENEY'S NONPAREIL was sent by Mr. WHITING. Large and juicy, with a tender flesh; but not highly flavoured.

BLENHEIM ORANGE was sent by Mr. SWINERD. Very juicy, and good.—By Mr. COOK, of Notting Hill. Very large, and fine coloured; but soft fleshed, and deficient in flavour.—By RICHARD FRANKUM, Esq. (of WOOLHAMPTON). Large, very clear skinned; crisp, juicy, and sweet.

WYKEN PIPPIN was sent by Mr. M'LAREN. Very handsome, juicy, and good flavoured.

FIVE-CROWNED PIPPIN was sent by Mr. M'LAREN. Large, and juicy, with tender flesh; but not quite ripe.

APPLES SENT IN SMALLER QUANTITIES.

Mr. CRANSTON (of Hereford), sent LOAN'S PEARMAIN. A very juicy, tender-fleshed variety, with a brisk sub-acid flavour.

DOWNTON HALL GILLIFLOWER, in comparison with Cornish Gilliflower. The former was greener in colour of rind and flesh, more regular in form, less ribbed, but coarser in flesh, and more acid in flavour.

In each of the above classes many of the subjects exhibited were unripe, and were reserved for future consideration; and some were too ripe to be in a fit state for examination.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 169.)

LIST OF SELECT APRICOTS.

I. FOR THE SOUTHERN COUNTIES OF ENGLAND, EXTENDING AS FAR NORTH AS THE RIVER TRENT.

For Walls.

Hemskerk	Peach
Kaisha	Pine Apple
Large Early	Royal
Large Red	Shipley's
Moorpark	Turkey

For Standards.

Breda	Moorpark
Brussels	Turkey

II. FOR THE NORTHERN COUNTIES OF ENGLAND, EXTENDING FROM THE TRENT TO THE TYNE.

Breda	Red Masculine
Brussels	Roman
Hemskerk	Royal Orange
Moorpark	Shipley's

III. BORDER COUNTIES OF ENGLAND AND SCOTLAND, AND OTHER FAVOURABLE SITUATIONS IN SCOTLAND.

Breda	Red Masculine
Brussels	Roman
Hemskerk	Royal Orange

IV. VARIETIES BEST ADAPTED FOR PRESERVING.

Kaisha	Peach
Moorpark	Roman
Musch Musch	Turkey

BERBERRIES.

Berberries, though not cultivated to any extent, may be enumerated among the British fruits. The COMMON BERBERRY is found wild in hedgerows, and is also sometimes grown in shrubberies, both as an ornamental plant, and for its fruit, which is preserved in sugar, for use in the dessert. The best variety to cultivate for that purpose is the following, but it is difficult to be obtained true.

STONELESS BERBERRY.—A variety of the Common Berry, without seeds. This character is not assumed till the shrub has become aged; and it would be well for those who desire to furnish themselves with this variety, to be assured that the plants were taken from an aged stock, in which the stoneless character had been manifested, so that no doubt or disappointment may arise. Even young suckers, taken from an old plant of the true variety, very frequently, and indeed generally, produce fertile fruit during the early years of their growth; and it is, therefore, necessary to have some assurance, to be certain that the plants are correct.

CHERRIES.

SYNOPSIS OF CHERRIES.

In the following arrangement I have endeavoured to classify all those varieties of cherries that are most nearly allied to each other, for the purpose of facilitating their identification.

All the varieties of cultivated cherries will be found to consist of eight races, into which I have arranged them:—I. The sweet, heart-shaped cherries, with tender and dark-coloured flesh, I have called HEARTS, as they include almost all the varieties familiarly known under that name. II. The pale-coloured, sweet cherries, with tender, light yellow, and translucent flesh and skin, I have distinguished by the name of AMBERS, as at once expressive of their character. III. Here we have the dark-coloured, sweet cherries, with somewhat of the Bigarreau character. Their flesh is not so firm and crackling as that of the Bigarreaus, but considerably harder than in the Hearts, and these I propose to call HARD-HEARTS. IV. Includes the BIGARREAUS, properly so called, with light-coloured mottled skin, and hard, crackling flesh. V. These are called DUKES, as they include all those so well known under that name. VI. Embraces all those nearly allied to the Dukes, but with pale-red skin, translucent skin and flesh, and uncoloured juice; they are, therefore, distinguished as RED-DUKES. VII. Includes all those, the trees of which have long, slender, and pendent shoots, and dark-coloured fruit, with acid, coloured juice, and appropriately termed MORELLOS; and VIII. I have called KENTISH, as it includes all those pale-red, acid varieties, of which the Kentish, or English, cherry is the type.

The advantages of such an arrangement and nomenclature are, that they not only facilitate identification, but assist description and interchange of ideas. If, for instance, a new cherry is introduced, and it is said to belong to the Red-Hearts, we know at once that it has some affinity with those familiar varieties Belle de Choisy and Carnation; or if it be a Morello, we know it is a dark-fleshed, acid cherry; while if we are told it is a Kentish, then we know it is a pale-fleshed, acid variety, and so with all the other divisions.

I. GEANS.

Branches rigid and spreading, forming round-headed trees. Leaves long, waved on the margin, thin and flaccid, and feebly supported on the footstalks. Flowers large, and opening loosely, with thin, flimsy, obovate, or roundish-ovate, petals. Fruit heart-shaped, or nearly so. Juice sweet.

§ *Fruit obtuse heart-shaped. Flesh tender and melting.*

* *Flesh dark; juice coloured.*—HEARTS.

Baumann's May	Knight's Early Black
Black Eagle	Luke Ward's
Black Heart	Monstrueuse de Jodoigne
Büttner's Black Heart	Ox-Heart
Corone	Trempeé précoce
Early Purple Gean	Waterloo
Gascoigne's Heart	Werder's Black Heart
Hogg's Black Gean	

** *Flesh pale; juice uncoloured.*—AMBERS.

Adams' Crown	Ohio Beauty
Amber Gean	Rockfort Bigarreau
American Doctor	Sparhawk's Honey
Belle d'Orléans	Tobacco Leaved
Downer's Late Red	Transparent Gean
Early Amber	White Heart
Hogg's Red Gean	White Tartarian
Manning's Mottled	

§§ Fruit heart-shaped. Flesh firm and crackling.

* **Flesh dark; juice coloured.—HARD-HEARTS.**

Bigarreau de Mezel	Monstrous Heart
Black Tartarian	Tradescant's Heart

** **Flesh pale; juice uncoloured.—BIGARREAU.**

Belle Agathe	Cleveland Bigarreau
Bigarreau	Downton
Bigarreau de Hildesheim	Harrison's Heart
Bigarreau de Hollande	Elton
Bigarreau Napoléon	Florence
Bowyer's Early Heart	Governor Wood
Büttner's Yellow	Lady Southampton's

II. GRIOTTES.

Branches either upright, spreading, or more or less long, slender, and drooping. Leaves flat, dark green, and borne stiffly on the leafstalks; large and broad in §, and small and narrow in §§. Flowers cup-shaped, with firm, stiff, and crumpled orbicular petals. Fruit round or oblate, sometimes, as in the Morello, inclining to heart-shaped. Juice sub-acid or acid.

§ Branches upright, occasionally spreading. Leaves large and broad.

* **Flesh dark; juice coloured.—DUKES.**

Archduke	Jeffries' Duke
Duchesse de Paillau	May Duke
Griotte de Chaux	Royal Duke
Griotte de Portugal	De Soissons

** **Flesh pale; juice uncoloured.—RED-DUKES.**

Belle de Choisy	Great Cornelian
Carnation	Reine Hortense
Coe's Late Carnation	Late Duke

§§ Branches long, slender, and drooping. Leaves small and narrow.

* **Flesh dark; juice coloured.—MORELLOS.**

Belle Magnifique	Griotte de Kleparrow
Büttner's October Morello	Morello
Donna Maria	Ostheim
Double Natte	Ratafia
Early May	

** **Flesh pale; juice uncoloured.—KENTISH.**

All Saints	Gros Gobet
Cluster	Kentish
Flemish	Paramdam

(To be continued.)

QUERIES AND ANSWERS.

FLUE FOR A SMALL GREENHOUSE.

"I am about to erect a small greenhouse, about ten feet square, to be heated by a flue about twenty feet long, and which it is only convenient to carry along the front and one end into a chimney in the corner. As I may want to plant a Vine or two, I am rather at a loss where to plant them, without the flue interfering. What would you advise in this case? Also, do you recommend an underground flue; and would the length do for the size of greenhouse named? Or, if you recommend a raised flue, what height above the ground will be best; and the size of the flue inside? The house will have about two feet of a brick wall along one end and the front; a wall at the other end and the back, to the height of the house."—D. D.

[If your house is already floored, it would be least trouble to build the flue on the surface,—say, a twelve-inch tile for its base, two bricks on edge for its sides, and covered with a twelve-inch tile. The sides should be well set in putty lime, and thickly lime-washed; the inside not plastered at all. It would be neatest to have the flue underneath the floor, the top of the flue forming part of the flue: full directions have already been given how to form them cheaply. Being quite out of sight, you might then take it round the glass end, or the door end, without any trouble. This we believe to be the best way for small houses, wherever you can

sink the stoke-hole enough to have the grate-bars eighteen inches lower than the bottom of the flue; but sunk flues do not heat a house quickly. A portable iron stove would also do admirably in such a house, if you did not mind the extra trouble. In either case, the Vines might be planted either inside the house, or outside, and the stem outside protected with a small square box, until where it entered the house.]

PRESERVING TOADS—DESTROYING ANTS.

"Can you tell me how to keep toads alive through the winter? My Peach blossoms were much injured by ants last spring. I could not then get a toad for love or money. I got some during the summer, but they have a wonderful faculty of making their escape from the houses. I tried confining them in pots, but they died after sinking into a torpor, that I thought was hibernation. When confined, they refused to eat any worms or insects I put among them."—BUFO.

[Toads like warmth in winter, and access to moisture. If these are provided, they generally show themselves early in spring. We have placed saucers of water in pits and frames for their use. We first did this from noticing them catching the drops of water that trickled from the leaves of plants. We do not pretend to know much of their history, however, and will be obliged to one of our contributors (Mr. Wighton), to give you a more detailed answer. When ants so injuriously trouble Peach trees, the best remedy is, to water the house with water containing a quarter of a pound of true Peruvian Guano, to four or five gallons of water, or to sprinkle it lightly, as powder, in their runs. The next best is, to mix arsenic with sugar, or honey, put in a saucer with another over it, kept apart with a small stick across between the two, so that other things, such as cats and dogs, can have no access: but the opening should be large enough to let the ants in.]

HEATING A VINYERY.

"I have just taken a house, in the garden of which there is a vinery, thirty-six feet long (lean-to) against a south-west wall. It is not heated in any way. I wish to heat it. Can I do so sufficiently with tan, or dung, to get Grapes early; or must I resort to hot water, or a flue? Will you kindly give me your advice on this point; and what will be the best and most economical plan to adopt? Also, will you tell me which is the best work to buy on growing Vines, as I am quite a novice?"—AN OLD SUBSCRIBER.

[“Sanders on the Vine” is a very good book, and well worth your attention; but there is nothing better, or more minute, than the articles contained in this work. You will not manage Grapes early, in such a house, by tan, or dung, inside alone, because in dull, cold weather, you might easily have more moisture than would be suitable. A bank of sweet heating material in the house, would, however, be a great assistance; but it requires considerable care in management, especially dung; for if not perfectly sweet, it will injure the young growths. To force early, we would recommend a flue, with three bricks a-bed for the sides, or even four, six inches wide inside, and then a twelve-inch tile would nearly cover it. For late forcing, brick on edge would do, and would heat sooner. For hard work, we prefer brick a-bed, as there is then little chance of bursting. If forcing early,—say, beginning in November, or December,—the flue should pass along the front and the two ends at least.]

BEE-KEEPING IN DEVON.—No. VII.

MISGIVINGS—DEAD OR ALIVE?—NETHERING versus SUPERING
—AN APIARY IN AN UPROAR—HUNDREDS AND THOUSANDS
—MILK AND HONEY—BRETHREN IN MISFORTUNE.

TEN days having elapsed since the occurrences related in my last two communications under this head, I could not divest myself of certain misgivings, as to the fate of those unfortunates whom I had expelled from their comfortable habitations, only to place in an empty box, and abandon them in the middle of what was now a well-nigh barren and inhospitable heath. It is true, that, before raising them on their temporary pedestal, I had provided for their immediate necessities by depositing a quarter of a pound of barley-sugar on the floor-board; but this modicum of

assistance could not be expected to last many days, although, doubtless, supplemented by the honey with which they had laden themselves before quitting their original domiciles.

Circumstances having occurred to delay the removal of my bees from the heath, where they had already remained much longer than was originally intended, I determined once more to visit them. This determination I carried into effect on the 13th of September, taking with me a bee-cloth, with the view of tying up and bringing back what I could not but fear would turn out to be merely an empty box, instead of the populous stock which I had, perhaps somewhat prematurely, denominated "No. 4."

I was, therefore, equally pleased and surprised at finding my colony of deprived bees, not only alive, but working vigorously, and in possession of about as much comb as is often made by a weak second swarm. Still, they were not so numerous as I expected; and here I may remark, that I did not find the stocks in the neighbourhood of the heath nearly so full of bees, as those I had driven in my own locality a few days previously. May not this arise from loss of life by the thousand and one accidents inseparable from honey-gathering late in the season?

Being still willing to increase the population of my deprived colony, I gladly availed myself of the opportunity of driving a strong stock, which had not swarmed this summer, but had been nadired, or rather "nethered," in the latter end of May or beginning of June.

As this is an operation not very frequently resorted to, a description of the manner in which it was performed, and its results, may not be uninteresting.

I find the first application of the "nether" principle in "The General Apiarian," by the late Rev. J. Isaac, of Moretonhampstead, in this county, who describes some straw hives on this plan, invented by a Mr. Roberts, and by him denominated the *Preserver and Remunerator*. These Mr. Isaac expressly terms "swarming hives." An ingenious application of the same principle is delineated in "Taylor's Bee-keeper's Manual," as a *Nadir Hive*. Mr. Taylor says, this "must not be confounded with the usual plan of disturbing the stock hive, for the purpose of placing an empty one beneath it, with a new entrance in the latter for the bees;" and it is in a recent communication from him that I find the term "nether" made use of, in contradistinction to the usual plan of "nadiring." Mr. Taylor has also devised a new hive on this principle, which, I understand, offers some peculiar advantages in working.*

The stock in question stood on a shelf, fixed in a recess in the garden wall. The depth of the shelf from front to back being the same as the diameter of the hive, it follows that there could be little or no projection to serve as an alighting-board. A large cluster of bees, having "hung out" without swarming during part of May, were enclosed in an empty hive, inverted, and fixed in close contact with the under side of the shelf, with its entrance immediately beneath that of the stock hive. This contrivance succeeded perfectly, so far as this: the bees forthwith commenced working in the inverted hive, and did not swarm.

On removing the nether hive, I found it about half filled with comb, containing from a pound to a pound and a half of excellent honey. The stock hive itself (a moderate-sized one) was, however, well filled, and weighed, I should think, nearly thirty pounds. Comparing this result with what might reasonably have been expected from supering a strong stock in a first-rate locality, during what has certainly been a good honey season, I fear it must be pronounced a failure, as far as regards the quantity of honey obtained.

Some hours after I had driven the stock hive, my services were again called into requisition, to secure the honey harvest from the bees, an organised attack having been commenced upon it. It appeared that the combs were cut out, and set draining in a room with door and window open, where they were soon discovered by an army of winged marauders. A removal to another (equally exposed) apartment did not mend matters, and when I arrived I found all the hives in the apiary in a state of the greatest excitement, and nearly every room and passage of the house crowded with bees. The uproar was equal to that attending the issue of a swarm. Hundreds buzzed in every window—thousands filled the air; whilst, in the dairy, scores were drowned in the milkpans, or stifled in Devonshire cream. Directing the removal of the combs and honey into the only room that had escaped invasion, I closed both door and window, and succeeded, after considerable trouble, and by slow degrees, in

clearing the combs of every bee that could fly. I regret to state, that this disastrous affair cost the lives of many hundreds, drowned either in milk or honey, or so clogged as to be unable to take wing.

When evening closed in, and the excitement had somewhat subsided, the destitute bees were conveyed to the heath, where they were united to their brethren in misfortune, in the manner already described by—*A DEVONSHIRE BEE-KEEPER*.

CALCEOLARIAS SUCCESSFULLY CULTIVATED.

At page 151, I see an article on the "Failure of the Calceolaria;" this failure I believe to have been general, although not so with me. I have grown a pretty good quantity, for the size of the place under my care, and I can confidently say, that there has neither been a healthier lot of plants, nor a better show of bloom, than I have had.

Seeing, also, that Mr. Robson will be glad to hear other persons' opinions on the subject, I beg to offer you my mite, as follows:—

In October, 1857, I engaged with my present employer, he being at that time building a new residence. The ground being roughed over, I had to set to work to make the place, which, although small, took a considerable time to get in order. Having the ground grassed and planted, and having all to do myself, it was the end of May before I could begin cutting the flower-beds; in doing which I took out the soil to about eighteen inches in depth, and ran a tile drain from them to the main drain, the ground in some places being excessively wet. I then loosened the clayey subsoil one spit deeper, and put in the turf, chopped fine, returning upon it the soil, which was the remains of an old pasture. I surfaced with a little of the same soil, mixed with a little sand and old hotbed manure. The plants were put in as I finished the beds, being watered well: the waterings were continued till the plants had got properly established.

Although it was a considerable trouble (the recent season having been so excessively hot and dry), I have been amply repaid for my trouble, not having lost half-a-dozen plants in the whole lot, and having a profusion of bloom.

This autumn I have put in more than 1,000 cuttings, or rather slips, in a two-light frame, and they are at present looking very healthy, and apparently all struck; so you will see I am at least preparing for any mishap.—T. C. F., near Manchester.

I USE three yellow kinds of Calceolaria—*rugosa*, *multiflora*, and *Kayii*. Of bronze Calceolarias, I grow *Prince of Orange*; and of dark varieties, *Sultana*; and a small-flowered, half-shrubby kind.

I commence propagation the first week in October, first making a square bed, of a size according to the number of hand-lights I want to use. The bed is formed of the refuse under the potting-bench, using, for the soil immediately under the light, about an inch in thickness of yellow loam, silver sand, and leaf-mould, sifted, and patted down firm. Then I put in, with a small dibber, the cuttings as thick as they can stand (the leaves touch each other), water the soil to a puddle, and put the lights on them. As I choose a place where the sun never shines on them, they do not require any shading; and, as the bed is raised above the level of the ground, the rains of autumn soak away, leaving no stagnant water, but a nice degree of dampness, apparently peculiarly favourable to them.

During severe frost, I throw a good thickness of litter over them (long litter from the stables I prefer), leaving it there till the frost is gone away. Though often frozen quite hard, I never knew them injured, unless exposed suddenly to the light; and I never find them require any air until February, when they commence growing. I find the damp then requires to be removed from the leaves, as it is apt to rot them.

At the commencement of March, I take them up, one by one, carefully, potting each into a large 60-sized pot, and put them into a cold frame, with plenty of air day and night, after they are established, till the roots reach the sides. Then I make an enclosure (not very wide) with laths and straw (cradle system would be better, but I have not room, or place, for that), and make up a bed inside, upon a hard bottom, four or five inches thick, of half well-rotted horsedung and half potting-bench refuse. I then plant them out, watering them, on cold days and

* Mr. Taylor's "Nether Hive" may be seen at Messrs. Neighbour and Sons, 149, Regent Street, London.

nights covering with *frigi domo*; and they grow here rapidly, of a beautiful green colour, and make stout bushes by May.

For the beds, or rows, where they are to be planted out, I use about half a barrow-load of rotten dung each bed, dug into the soil after the spring plants came out. I then take up my Callicolaria with a trowel. There is no sign of cramping in the roots, but a mass of fibres running in every direction. I plant and deluge them with water till established.

With this treatment I never found them injuriously flag, during the hottest sunshine of planting time; but they are in a few days established, and growing freely. Afterwards, during dry weather, I gave a potful of water to each bed regularly every evening.

They commenced flowering immediately, and continued so during the whole summer, most profusely,—*Rugosa* and *multiflora* being one mass of flowers, *Kayii* throwing up large bunches of flowers, immediately succeeded by others until October; and, of 200 plants this year, only one died during the summer. Other years I have sometimes had half-a-dozen die, but not more. Their uniformity in growing, too, is all that could be wished. I have grown them in this manner for four years, and they seem much hardier than when I first commenced, fewer becoming sickly, or dying.

As to using water, my living not many hundred yards from Paddington, in a great measure explains that. The natural soil is a tenacious clay, which dries and hardens in a few days, in summer, in a manner most surprising. I pour the water on the roots (not the leaves) from the spout of a small pot.

I grow a few plants of *amplexicaulis*, but they do not bloom with me till late in the autumn, and are not much in favour with my worthy employer, except for autumn bouquets.

I have a Mushroom-bed, made up in the beginning of October; but it shows no sign of bearing yet: a heat of about 55° is regularly kept up. The spawn appeared to have run freely through it; but the surface appears very dry. Should I water it? [Certainly, and with water about 60°.]

The stems of the Laurels in the garden are full of a white grub, which bores into the branches between the wood and bark, feeding there, and continuing till having bored all round, when the branches die. We have lost nearly all our old Laurels from this cause. Is there any means of destroying the insects, and preserving the Laurels? Would turpentine, lime, or sulphur, be of any use, brushed over the branches, in preventing and destroying them? [Send us some of the grubs in a quill.]—J. T., *Gardener to W. N. G., Esq.*

MEETING OF THE BRITISH POMOLOGICAL SOCIETY.

THIS Meeting was held at St. James's Hall, on Thursday last, Robert Hogg, Esq., Vice-President, in the chair. The Meeting was very numerously attended, and the quantity of fruit exhibited was large.

The following gentlemen were elected ordinary members:—E. WIGAN, Esq., Walton Lodge, Walton, Stafford; E. BANKS, Esq., Sholden, near Deal.

A Seedling Black Grape, from Mr. Wighton, of Cossey Hall, Norfolk, was again exhibited. This has been several times before the Meeting, but has always appeared under some disadvantageous circumstances, and the Meeting has asked to have it produced in its best condition. Even on this occasion only a portion of a bunch was sent from which a proper opinion of the character of the fruit could be obtained; and, therefore, it was decided that Mr. Wighton should again be requested to send it.

We fully concur in the decision of the Meeting on such subjects. In the matter of seedlings, particularly when the opinion of the Society is looked up to by the public, either as commendatory or condemnatory of them, it is of the utmost importance that the best examples of subjects should be submitted. The principle upon which the Society acts, is to deal with fruit as it is before them, and not as it was, or as it might have been. Exhibitors should, therefore, bear in mind, to send nothing (particularly seedlings) for the opinion of the Society, except what is in good, or in the best condition in which it can be produced.

A Seedling White Grape, from Mr. Melville, of Dalmeny Park, N.B., was also exhibited. It is a *Muscat*, with a fine large oval berry; but it was quite unripe. This was the first season of its fruiting, and the bunch was small. It, however, appear to set better than the *Muscat of Alexandria*, as we did not observe the remains of any abortive flowers; but it is too early yet to form a judgment of its merits.

At this Meeting, prizes were awarded for the following:

ONE POUND, to Mr. Hall, gardener to T. Lucas, Esq., Roehampton, for the best dish of *Glout Morceau*; and TEN SHILLINGS, to Mr. E. Tiley, Bath, for the second best.

The fruit sent by Mr. Hall was very handsome and highly flavoured, and was grown against a wall. That of Mr. Tiley was from standards, and was of excellent flavour.

ONE POUND, to Mr. Cox, gardener to W. Wells, Esq., Redleaf, for the best dish of *Winter Nelis*; and TEN SHILLINGS, to Mr. Wighton, gardener to Lord Stafford, Cossey Park, Norfolk, for the second best.

Mr. Cox's fruit was large and handsome, and Mr. Wighton's was small. The former was grown against a wall, and the latter on standards; both were very highly flavoured.

ONE POUND (for the best dish of any other variety of Pear) was awarded to Mr. Shoesmith, gardener to J. Moorman, Esq., Bexhill, Surrey, for *Marie Louise*; and they were certainly very fine, both in size and flavour. TEN SHILLINGS, to the same gentleman, for *Van Mons (Léon le Clerc)*, which were also remarkably fine specimens, but scarcely ripe. One or two of the fruit, that were most highly ripened, were very delicious.

The Pear which was exhibited last year by Mr. Matthews, of Clapham, under the name of *Matthews' Eliza* (a seedling), was again exhibited; but was inferior in size and flavour to those of last year, and possessed considerable grittiness. This, however, is no demerit to that variety, as there are few, if any, of our best varieties of Pears that have not this season fallen far short of their usual merits.

Two premiums were offered for *Old Nonpareil* Apples; but the dishes exhibited were so inferior in quality to what we expect to find in the *Nonpareil* that no awards were made.

Two premiums were awarded for the best and second best Apples of any other variety, which were awarded:—1st. ONE POUND, to Mr. James Holder, of Reading, for *Golden Harvey*; and 2nd. TEN SHILLINGS, to Mr. Duncan, Lamborbey, near Eltham, for *Lamb Abbey Pearmain*.

A Seedling Apple, from Mr. G. Wolsey, of St. Andrews, Guernsey, possessed considerable merit. It is said to be the result of a cross between *Nonpareil* and *Golden Pippin*. It is a small conical Apple, with a yellowish-green skin, very much covered with thin grey russet. The flesh is yellowish, tender, juicy, sugary, and brisk, with a fine perfume.

An immense quantity of other fruits was submitted to the examination of the Meeting; but we must leave any remarks upon them till the appearance of the Society's report, which we hope the Secretary will use more diligence in preparing than he has hitherto exhibited. It is disgraceful, that the last Meeting of the Society should have taken place on the 4th of November, and the report did not make its appearance till the 16th of December, a period of nearly six weeks. This, we regret to say, is more the rule than the exception, and the Society's interests have been much prejudiced in consequence. We trust, if there is a recurrence of this neglect, for which Mr. Davidson has frequently been reprimanded, that the Society will at once have his place supplied by some one else.

DISEASE IN THE WELLINGTONIA GIGANTEA.

IN answer to your correspondent, who, in *THE COTTAGE GARDENER*, of the 7th inst., complains that the terminals of the lower branches of some Wellingtonias in his possession appear to be dying, I beg to say, that this appearance is by no means peculiar to his specimens of this noble tree. This dying of the terminals of the branches of the Wellingtonia is of too common occurrence in plants growing in England: it is the one thing that utterly destroys the beauty of the plant. Certainly, dampness cannot be the cause of this decay; for I have known plants in the driest chalky situation, and in sandy situations, affected in the same way. I should rather be disposed to think that it arose from too little, than too much moisture. I have a Wellingtonia which I planted in the spring of 1857: it stands in a clayey loam, and is sheltered from the north and east by belts of trees. When first planted in its present situation, it was seven inches high; in about six months time, it reached the height of fifteen inches and a half; and was on the 30th of last month, when I measured it, three feet six inches and a half. The soil and position evidently suit this young plant, for it thrives apace, and is beautifully green at every point, and well covered with branches from the very ground upwards. I rather pride myself on this plant, and, from all that I hear, I may well do so.

I have another specimen of the Wellingtonia, which was planted in the autumn of last year: it is in a more exposed situation, and in a soil similar, though somewhat inferior, to that in which the first-named is planted. This latter plant has scarcely grown at all since put in, and certainly is not looking healthy; but I must tell you that it was rather pot-bound when I first had it. I hope that by next year it will recover this, and will be doing something better.

I am disposed to think that, soil and situation being favourable, the Wellingtonia will thrive well in our country: the situation must be sheltered, and the soil rich, and not too dry. I believe this, from my own little experience, and from what I know by report of the climate and soil of that part of California in which the Wellingtonia grows. "G. T. F." will find an admirable account of the botany, climate, and soil, &c., of California, in the "English Cyclopædia," by Charles Knight.

I believe the dying of the terminals of the branches of "G. T. F.'s" Wellingtonia is, without doubt, a disease. But this question has just suggested itself to me.—Can it be that the Wellingtonia of "G. T. F.", and others, are merely beginning to put away their seedling habit, and are thus early assuming the appearance and garb of the full-grown tree? We know that the Wellingtonia, in its native country, reaches the height of 300 feet or more, and that the whole of the stem is bare of branches, except towards the top. When do these trees, in their own country, first begin to cast off their lower branches? I should like much to hear, whether any of the readers of *THE COTTAGE GARDENER* can bear me out in what I have said respecting the situation and soil which is necessary for the well-being of the *Wellingtonia gigantea*.—C. P. C.

TO CORRESPONDENTS.

PRUNING OUR PAGES (*A Journeyman Gardener*).—Much obliged by your suggestions, but they cannot be acted upon, for many reasons, too lengthy to publish.

PASCALL'S PATENT CUTTING POTS (*A Constant Subscriber*).—We do not know anything about them. If of any merit, they should be advertised.

SEED FROM AUSTRALIA (*J. J. Pickard*).—Your plants—from the small piece of foliage sent—we consider to be either *Acacia Lophantha*, or *A. decurrens*, or *A. affinis*; most probably, the first. In that case, it will do for an ordinary-sized greenhouse. If *decurrens*, it will want much room, unless frequently cut down. All of these are pretty ornaments when young. All except the first, and that, too, in a small greenhouse, if kept in pots, will require to be cut down freely every two or three years. All will flourish in common soil, and just require to be kept from severe frost. If you are south of London, you might try some of your plants against a wall, or even out of doors, in a sheltered spot. You may grow them in the tree or the bush form, just as your taste directs.

SPORT FROM RIGBY'S QUEEN GERANIUM (*Amateur*).—You have obtained this sport by the best practical means known to gardeners, and suggested by themselves alone. The only means by which the value of the plant in cash, or public utility, can be known, is to grow a few plants of it to the present standard of excellence, and to exhibit them in the neighbourhood of London, Edinburgh, or Dublin, from whence the merits of the kind,—as compared with the merits of others in the same class,—would circulate and extend to the ends of the earth. No good sport or seedling is done full justice to without going through this ordeal; but the arrangements for these trials are practically defective. Every new plant ought to be exhibited in that style of growth for which it is best suited by nature:—a tree, a bush, a round or a pyramidal bush, a free open conservatory style

of habit, a vase plant, a rustic basket, a hanging basket, or a bedder or ribbon plant,—all these styles, and others, ought to be insisted on at shows, and will be when shows are an expression of the taste, tendency, and what is called for by the public voice.

NAME OF APPLE (*R. H. H.*).—It is the *Cellini*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

DECEMBER 29th and 30th. BURNLEY AND EAST LANCASHIRE. Sec., Angus Sutherland. Entries close December 10th.

JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton. Entries close December 11th.

JANUARY 18th, 19th, and 20th. CHESTERFIELD AND SCARSDALE. Secs., W. M. Hewitt, and J. Charlesworth. Entries close January 4th.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Pitman, Esq.

N.B.—Secretaries will oblige us by sending early copies of their lists.

LIVERPOOL POULTRY SHOW.

OUR task at this season of the year—in re poultry shows—always reminds us of Penelope's web; as that celebrated piece of *crotchet*-work was endless, so our task seems to be. We have hardly ceased our encomiums of the Birmingham, before we are called upon to speak of Liverpool. We always do so with pleasure. There is a comfortable straightforwardness about the paragraph at the head of the regulations: "The Committee hold themselves personally liable for the payment of the prizes offered." But we have to speak of the list as a common-sense one. We need not say, all the prizes are liberal,—that quality belongs to Liverpool. Poultry amateurs are aware of two facts: first, that certain classes have entailed a loss for years; and next, that exhibitors in them have complained that due encouragement was not given, nor good prizes offered for them. We have for a long time contended, and written, that the remedy was in their own hands. The Liverpool Committee has adopted our views, and Malays, Andalusians, White Dorkings, Brahma Pootras, Polands, Sultans, and Black Hamburghs, are included in this clause: "These varieties not having been exhibited at previous Liverpool Shows in sufficient numbers to induce the Committee to offer them large special prizes, must be entered in the classes specified. The whole of the money, after deducting five per cent. from the entrance fees in each class, will be repaid, and if more than four pens be entered, two prizes will be given instead of one." The same terms are offered to the competitors in Single Cocks.

Remains, the grand Game Cock Sweepstakes, one hundred birds at £1 each. Prizes of £40, £20, £15, £10, and £5. When the prize-list was issued, seventy-nine were already entered.

We do not hesitate to say, nothing can be more liberal, or more deserving of support, than this programme; and we trust that visitors and exhibitors will feel, that where a Committee has taken as much pains as the gentlemen acting at Liverpool have done, to meet the views and requirements of amateurs, it is their duty to show they are not unmindful of it, and to prove, by cordial and hearty co-operation, they recognise the great fact, that in any such pursuit the interests of all engaged in it are identical.

CONDITION OF PRIZE SPANISH FOWLS.

As you know me to be one of the largest, and one, too, of the most successful exhibitors of Spanish fowls, perhaps you will permit me to make a few remarks in reply to what you said in your account of the Birmingham Show, of the condition in which these birds are at present shown.

You seem to imagine, that if more care and attention were paid to making the face quite clean, and washing the legs and feet, that the birds would present more fully that contrast which is so striking and so beautiful between the white face, coral-comb, and jet-black feathers, so remarkable in a Spanish fowl, when shown in all its glory. Take my word for it, that we exhibitors spare neither time, trouble, nor cost, in our endeavour to attain perfection. Many owners, in common with myself, even go to the heavy expense of sending a servant in charge of the birds, that every attention may be paid to them before and during the exhibi-

tion. But, consider for a moment the disadvantages under which the birds are presented to your eye. Take, for example, the recent Birmingham Exhibition. The birds had to leave home very early on Friday morning, the weather being very severe: to remain in the pens that night, all Saturday, Saturday night, Sunday, and Sunday night, before the public saw them. You know well, that, in many of the best cocks, the wattles are very long, and that they trail on the ground every time they stoop to take their food, and if the ground be not clean must dirty them, and their faces and feathers also. Instead of being fed, as at home, either out of a clean dish, or from off the grassy sods of his owner's lawn, at a Show the Spanish cock has to take all his food from the floor of his pen; to devour the sticky lumps of soft barleymeal and corn out of the sand at his feet, which is often wet from the over-turning of the water, and mixed with the dirt of the bird. How can a bird so confined and so fed, however great may be the care and attention of the men appointed by the Committee to feed and keep clean the birds, look as beautiful as in his owner's yard?

I can assure you, that, after being exposed to such adverse influences, my pets often look so sadly—so different to what they did when at home, that I can hardly conceive how it is they are so changed. Every suggestion made by you, in THE COTTAGE GARDENER, with regard to poultry, is most valuable; and if you will tell me what "the same care" is that would bring about the "same perfection," as others are said to have attained; and, whatever the cost, whatever the trouble, you shall see it carried out at the coming Crystal Palace Show—at any rate, in every pen that I exhibit.

At the last Sheffield Show, the chaff of oats was put into the pens: it kept the birds dry and clean, and is, I think, better than sand.

Lastly, I would briefly add, having trespassed, I fear, too much already, that, in my opinion, the days of exhibition, at each place, are too many. I well know the difficulties committees have to contend with, and how important and right it is, that, by keeping the Show open, a return should be got for the money expended; but, as an exhibitor, I had far rather pay *more for each pen* I entered, satisfied, as I am, that all birds suffer, and that many die from their long confinement in the pens. It should be remembered, also, that the present season is against the old Spanish birds kept in the North. The "sad condition" of one pen mentioned by you arose from their not having got over their moult: it is only in the South that this can be effected thus early—at least, such I find the case in the majority of the numerous Spanish birds which I possess.—A LADY.

TREDEGAR POULTRY EXHIBITION.

THIS is held annually at Newport, Monmouthshire, and came off on the 16th instant. List of prizes:—

DORKING.—Prize, F. T. Parker, Llanvair, Ragland. Highly Commended, W. David, St. Nicholas, Cowbridge.

SPANISH.—Prize, E. Payne, Wharf, Cardiff.

GAME.—Prize, E. G. Jarvis, Itton, near Chepstow.

HAMBURGS (Silver).—Prize, R. Trew, Inkermann Street, Newport. Commended, J. Gameeson, Pontyppool.

DORKING.—Prize, F. T. Parker, Llanvair, near Ragland. Highly Commended, F. T. Parker, Llanvair, near Ragland.

SPANISH.—Prize, C. H. Oliver, Commercial Street, Newport.

COCHIN OR BRAHMA POOTRA.—No competition.

GAME.—Prize, E. G. Jarvis, Itton, near Chepstow. Highly Commended, L. Griffith, Pontnewydd, near Newport.

HAMBURGS (Golden).—Prize, T. W. Nicholas, Hill Street, Newport. Chickens.—Prize, J. Llewellyn, St. Fagans, Glamorganshire. Highly Commended, J. Llewellyn, St. Fagans, Glamorganshire.

POLANDS (White-crested Black).—Prize, J. Llewellyn, St. Fagans, Glamorganshire. Highly Commended, R. N. Osborne, Dock Street, Newport. Chickens.—No competition.

POLANDS (Gold or Silver).—Prize, G. Hoskins, Commercial Road, Newport. Chickens.—Prize, W. Speary, Newport.

BANTAMS.—Prize, F. T. Parker, Llanvair, near Ragland (Game). Highly Commended, F. T. Parker, Llanvair, near Ragland (Black). Commended, E. Payne, Wharf, Cardiff (Black).

FARMYARD BREED.—No competition.

ANY OTHER DISTINCT BREED.—Prize, R. H. Nicholas, Yewberry Cottage, Malpas (Black Hamburgs). Chickens.—Prize, R. H. Nicholas, Yewberry Cottage, Malpas (Black Hamburgs). Commended, R. H. Nicholas, Yewberry Cottage, Malpas (Andalusians).

TURKEYS.—Prize, W. W. Jones, Cefnlogell, near Newport.

GESEES.—Prize, A. Higgins, Woollaston Grange, near Chepstow. Commended, E. Payne, Wharf, Cardiff.

Ducks (Aylesbury).—Prize, E. Payne, Wharf, Cardiff. Commended, F. Roope, Merthyr; A. Higgins, Woollaston Grange, near Chepstow; Brewer, Machen.

Ducks (Rouen).—Prize, — Brewer, Machen.

JUDGE—Mr. Edward Hewitt, Spark Brook, Birmingham.

THE BIRMINGHAM POULTRY SHOW.

This highly important meeting was brought to a termination on Thursday evening. The results, with one exception, were perfectly successful. We are confident that but one opinion prevailed as to the eminently satisfactory character of the entire display, and the completeness of the arrangements. Financially, however, we have no advance to record. On the contrary, we regret to say, there was a decrease in the attendance and in the receipts, owing, in part, probably to the continued stagnation of the commercial world, and in part to the uncertain state of the weather. The following statement will show the extent of the falling-off, as compared with last year; but, as we understand the subscriptions will show an increase, it is probable that the total receipts will be found equal to those of last year when the accounts are completed:—

	RECEIPTS.	1857.	1858.
First day	£119 10 0	.....	£57 15 0
Second day	312 8 0	.....	240 17 0
Third day	366 17 0	.....	319 4 0
Fourth day	436 10 0	.....	414 14 0
	£1,235 5 0	.....	1,034 10 0
	ADMISSIONS.	1857.	1858.
First day, subscribers' tickets	4,002	.....	3,673
" paid	478	.....	239
Second day, subscribers' tickets	895	.....	756
" 1s. tickets	58	.....	51
" paid	6,248	.....	4,817
Third day, subscribers' tickets	793	.....	998
" 1s. tickets	53	.....	264
" paid	7,337	.....	6,384
Fourth day, subscribers' tickets	1,266	.....	1,234
" 1s. tickets	77	.....	179
" paid	8,780	.....	8,294
Working classes	14,511	.....	15,500
	44,448	.....	42,389

It will be seen that nearly one thousand more tickets for the working classes were issued last week than in 1857.

We are enabled to furnish the following statistics in reference to the poultry exhibition:—The entries, exclusive of Pigeons, numbered 1,336, against 1,300 in 1857. The sales during the four days that the Hall was open to the public amounted to £946 12s. : viz., on Monday, £657 9s.; on Tuesday, £136 13s. 6d.; on Wednesday, £83 17s. 6d.; and on Thursday, £48 12s. 6d. Of the first-mentioned sum, £109 14s. 6d. is the price of birds bought in on account of the exhibitors; the owner of the first prize pen of White Bantams, for instance, thinking it necessary to take this precaution, in order to retain them in his possession, fearing that the price might not prove, as it was intended to be, prohibitory. The sales last year produced £816. The following is a statement of the entries and sales in each class, in explanation of which we may observe that the classes for hens and pullets contained two birds in each:—There were 22 entries in the whole of the Spanish classes. Birds exceeding one year old, 20 entries; 2 sales. Hens, 24 entries; 2 sales. Chickens, 30 entries; 5 sales. Pullets, 8 entries; 4 sales. Single cocks, 36 entries; 6 sales. Dorkings: Total entries, 109. Coloured:—Birds exceeding one year old, 26 entries; 4 sales. Hens, 26 entries; 8 sales. Chickens, 73 entries; 19 sales. Pullets, 32 entries; 11 sales. Single Cocks, 74 entries; 20 sales. White:—Birds exceeding one year old, 14 entries; 2 sales. Chickens, 18 entries; 1 sale. Cochin China: Total entries, 100. Cinnamon and Buff:—Birds exceeding one year old, 14 entries; 1 sale. Chickens 27 entries; 5 sales. Brown and Partridge-feathered:—Birds exceeding one year old, 8 entries; 1 sale. Chickens, 32 entries; 3 sales. White:—Birds exceeding one year old, 8 entries; 1 sale. Chickens, 11 entries; 1 sale. Single Cocks, 19 entries; 4 sales. Brahma Pootra: Total entries, 12. Birds exceeding one year old, 4 entries; no sale. Chickens, 8 entries; no sale. Single Cocks, 9 entries; 1 sale. Polish: Total entries, 51. Black:—Birds exceeding one year old, 6 entries; no sale. Chickens, 10 entries; 2 sales. Golden:—Birds exceeding one year old, 8 entries; no sale. Chickens, 7 entries; 1 sale. Silver:—Birds exceeding one year old, 9 entries; no sale. Chickens, 8 entries; 1 sale. Any other variety of Polish, 3 entries; no sale. Single cocks, 13 entries; no sale. Hamburgs: Total entries, 142. Golden-pencilled:—

Birds exceeding one year old, 16 entries; 1 sale. Chickens, 23 entries; 4 sales. Golden-spangled:—Birds exceeding one year old, 15 entries; 1 sale. Chickens, 22 entries; 2 sales. Silver-pencilled:—Birds exceeding one year old, 7 entries; no sale. Chickens, 23 entries; no sale. Silver-spangled:—Birds exceeding one year old, 8 entries; no sale. Chickens, 18 entries; 1 sale. Single Cocks:—Golden-pencilled, 26 entries; 2 sales. Golden-spangled, 17 entries; 2 sales. Silver-pencilled, 13 entries; 1 sale. Silver-spangled, 6 entries; 1 sale. Game: Total entries, 200. White and Piles:—Birds exceeding one year old, 13 entries; 2 sales. Chickens, 10 entries; 2 sales. Black-breasted and other Reds:—Birds exceeding one year old, 31 entries; no sale. Chickens, 78 entries; 11 sales. Blacks and Brassy-winged, except Greys:—Birds exceeding one year old, 12 entries; 1 sale. Chickens, 17 entries; no sale. Duckwings and other Greys and Blues:—Birds exceeding one year old, 12 entries; 1 sale. Chickens, 27 entries; 4 sales. Single Cocks, 63 entries; 4 sales. Sweepstakes for Single Game Cocks, 30 entries; 1 sale. Malays: Total entries, 13. Birds exceeding one year old, 8 entries; no sale. Chickens, 5 entries; no sale. Other distinct breeds:—Total entries, 17; 4 sales. Bantams: Total entries, 85. Gold-laced, 17 entries; no sale. Silver-laced, 11 entries, 2 sales. White, 7 entries; 1 sale. Black, 12 entries; 4 sales. Game, 32 entries; 4 sales. Any other variety of Bantams, 6 entries; 2 sales. Geese: Total entries, 24. White, 11 entries; 1 sale. Grey and Mottled, 10 entries; 2 sales. Ducks: Total entries, 90. Aylesbury, 23 entries; 11 sales. Rouen, 42 entries; 16 sales. Black East Indian, 11 entries; 1 sale. Any other variety, 14 entries; 3 sales. Turkeys: Total entries, 28. Birds exceeding one year old, 14 entries; 7 sales. Birds hatched in 1858, 14 entries; 5 sales.

We should likewise mention, in conclusion, that extensive as was the assemblage of domesticated birds, the whole of them which had to travel any distance were despatched at a sufficiently early hour on Friday to reach home on that day or on Saturday morning, and that the whole, except a few which were directed to wait till called for, had left the building by the evening of Friday, a result for which the owners are much indebted to Mr. W. B. Mapplebeck, under whose able and energetic supervision the poultry arrangements were carried out. The management of the feeding was again entrusted to Mr. George Blyth, and was conducted with so much care and judgment, that of the fowls which were in health at the time of their arrival, only one (a Dorking cock) died in the confinement to which they were subjected in the Hall.—*Midland Counties Herald.*

POLAND FOWLS.

In a report of the Edinburgh Poultry Show, held at the same time as Birmingham, I find the reporter says:—"The Polands are birds of great beauty, but more for ornament than use, neither flesh nor eggs being equal to the before-named classes"—i.e., the Hamburgs.

I think our Caledonian brother is wrong, and trust these lines will meet his eye. Neither Hamburgs nor Polands are among the renowned table fowls, but both are good; and it is notorious the latter are very free layers, quite as much so as the Spangled Hamburgs, and with this advantage over even the Pencilled, that the eggs are larger. They are a delicate fowl on the table, and have a full breast. There appears to be a crusade against the poor Polands, and their friends should speak out, with a view to their rescue.—TOPKNOT.

NOTES ON THE CRYSTAL PALACE BIRD SHOW.

THE Exhibition of Canaries and British and Foreign Cage Birds, that has recently taken place at the Crystal Palace, at Sydenham, brought together a good display of birds, to the amount of 359 entries.

The first class was for clear yellow Norwich Canaries. The two prizes were awarded to Mr. William Minns. Entry 4 contained two very pretty pieds, but which were evidently out of place in a class for clear yellows. The Norwich Canaries here shown seemed to be longer than usual, as if they had been crossed with the Belgians.

Clear Buffs came next, which I found only to be another name for what we are accustomed to call mealy.

Of yellow Belgians, Mr. Lingard (31) received the first prize; but I considered the bird too much hooped.

In clear mealy Belgians Mr. Lingard was again fortunate, and this bird was also round shouldered.

Entry 44 (in class V.) for variegated yellow Belgians, appeared to me to be the best. In the next four classes of Belgians the prizes were all withheld. 48 was a long bird. 52 was also a very long bird, but low on the legs.

It may not be out of place here to remark, that though length, in Belgian Canaries, as in Powter Pigeons, is a very great point, yet it is not all: they must also be straight and erect, to make the birds carry themselves upright. Breeders and fanciers would do well to pay attention to the cages and perches: let the perches be of sufficient size for the birds to stand securely, and to balance themselves easily thereon. The cages should be light and roomy, and the perches kept down well from the top of the cage, to encourage the birds to stretch themselves up. A crouching posture and a hooped carriage spoil the longest bird.

The blue, silver, and golden-spangled Lizard Canaries came next. They were very pretty, and accurately marked, with their clear heads and spangled bodies. They maintained their original form and purity, and do not seem to be stretching after the Belgians.

The London Fancy, Mealy, or Jonqué, with dark wings and tails, showed strong, and were very beautiful birds, their accurate marking, and the dark colour of their wings and tails, contrasting well with the delicate mealy, or bright yellow, body colour.

Pied Goldfinch Mules were indeed a treat to look at. There were thirty entries, and very handsome birds. In the majority the markings were very regular and evenly broken. The bright yellow ground-colour of the Jonqué Goldfinch Mules attracted much attention. First prizes were awarded to Messrs. Calvert and Buckle, and Mr. Willoughby; second prizes to Mr. Lingard and Mr. Arthur. Highly Commended, Messrs. Arthur and Hanby. Commended, Messrs. Arundell, Calvert and Buckle, and Mason.

For Linnet Mules, the prizes were not awarded. There were only four entries.

Class XX. (for any other variety of Canaries, or their Mules) although numerously filled, received only one prize,—139, a Cinnamon cock, and not the only one. In this class (152½) appeared the curiosity of a Cinnamon Goldfinch Mule, which, I think, was certainly worthy of some notice. Also 151, an Aberdevine, or Siskin Mule. Entries 143 and 152 were both little birds, natives of the island of St. Helena,—the Serin Finch, and allied to the Canary, but, I believe, a distinct species: one was shown as a St. Helena Canary, and might have been commended, but the other was endeavoured to be palmed off as a Greenfinch Mule. Some birds were also shown, or perhaps offered for sale, in this class as German Canaries; but they did not appear so delicate as the true sweetsong German Canaries usually are.

British birds were but poorly represented:—Five Bullfinches; one Chaffinch, which received a prize,—it is a pity these birds are not better appreciated; four Goldfinches; one Hawfinch; three Skylarks; one Woodlark; one Robin; one Blackbird; five song Thrushes; one White Thrush; one Missel Thrush; one Starling; and one Magpie, constituted all the representatives of our non-migratory birds.

Class XXXIX. (for any other variety of British birds), produced only three pairs of the common cage Dove, or Collared Turtle (*Columba risoria*). But they were all entered in a wrong name; nor are they natives of this country. The names they were shown by were Turtle or Ring Doves: the Turtle Dove (*Columba tutur*) is a summer visitant to our woods; the Ring Dove (*Columba palumba*) is a constant resident, being the largest of our Doves with a white ring round its neck; and both are distinct from the Collared Turtle.

Class XL. (for hybrids, or mules, of any variety except Canary mules) was an unexpectedly small class, but requires some notice. 254 and 255 were certainly the most curious of the whole exhibition: they were mules between cock Goldfinch and hen Bullfinch—very beautiful birds, partaking of the appearance of both parents, the Goldfinch slightly predominating. 256 was shown as a hybrid between Goldfinch and Greenfinch, but in which the Greenfinch seemed to predominate.

257 was a hoax,—a common corn Bunting, shown by Edward Tyrell Keys, 51, Beresford Street, Woolwich, as a cock hybrid between Skylark and Sparrow. This was the same exhibitor who showed the St. Helena Finch (in Class XX., 152) as a

Greenfinch mule. But what could the Judge be about, to highly commend this twopenny Bunting as a £10 hybrid? Does he not yet know so common a British bird; if not, he is not competent to judge birds at a public Show? There could be no mistake: no cross between Skylark and Sparrow could produce a Bunting, the formation of bill is too significant.

Of the foreign birds I know little, therefore I shall not venture any remarks thereon.—B. P. BRENT.

BRAHMA POOTRAS.

WILL you allow me again to differ from the opinion given in your "Letter Box" of the 7th inst., about Brahma Pootras. You say, they are only a variety of Cochinchinas, and not superior to any others. I heard, in Bingley Hall, so much good, sound poultry talk, last week, and such a good spirit seemed to prevail among amateurs, that I cannot help thinking our "halcyon days" are coming, and that your columns will be full of information from all parties. It is no small pleasure to be able to communicate our little discoveries, to give, or to seek, information; and it is in this spirit, and to carry out the recently formed resolve, made in presence of the Brahma classes, that I venture to appear in print. Let me give one result. I have, at one yard, fifteen early Cochinchina pullets; and at another, eleven Brahma pullets, of the same age. I have from the latter, although numerically weaker, *one third more* eggs than from the former. The result was the same last year. They are the hardiest fowl I ever had: they are not large eaters, and they are very superior to the Cochinchina, as a table fowl. I wish those who have long kept and shown these birds—Messrs. Botham, Teebay, Fowler, Craigie, and Breavington—would give us the result of their experience; and I confess, that, after the saucy pleasure of daring to differ from an authority like yourself, one of my motives for writing this, is, to see whether these gentlemen cannot be persuaded to give us results, or remarks, which may serve to put these birds in their proper place—not to treat them as mongrels, or off-shoots, but to invest them at once with the dignity of a pure and valuable breed.

—SALOP.

[We shall be very glad to have reports of the produce and other experiences of the gentlemen named by our friend "SALOP"; and if they can show that they are superior to other Cochinchina fowls as egg-producers, or as table birds, we will readily recommend them, for we are not the slaves of colour. But no evidence can be produced to convince us that Brahma Pootras are a pure breed. We have a sustained opinion that they are not, but that they can be produced by crossing the White Cochinchina with other breeds—as, for example, with the Dorking. The White Cochinchina we believe to be especially open to the produce of such crosses, and to vagaries in colour; for example, it is not at all uncommon for it to produce a black chicken.

We are aware that Mr. Baily and other good authorities differ from us; but we have on our side the Rev. Mr. Wingfield, we believe Mr. Hewitt, and other men "cunning in talk about fowls."]

CHIPPENHAM POULTRY EXHIBITION.

THE poultry exhibitions of Chippenham have always been notorious for the superiority of the general arrangements; and, undoubtedly, the meeting of 1858, just concluded, fully maintains the high character of its predecessors. Every possible comfort was given to the poultry exhibited, and every attention paid to the convenience of those visitors who inspected them. The great general improvement, throughout all the classes, beyond those of former years, must have proved a matter of high congratulation to those gentlemen by whose untiring efforts this excellent annual meeting was instituted, and has been, also, so successfully carried out. On the present occasion, many of our most celebrated breeders were competitors.

In Class 1 (*old Spanish*), the same want of high condition presented itself, that of late has been so especially the subject of observation at other meetings. It is remarkable "how very late this season all old Spanish birds are moulted;" nor do we suppose, that the best trial of relative merits in this class will take place until towards the close of the coming January of 1859. The *Spanish Chickens* were decidedly superior specimens. The best pen, however, were altogether thrown out, by a single pullet being shown instead of a pair. The *Dorking* classes were generally good. In *Game*, the total disregard to matching the colours of the legs, led many an otherwise worthy pen into

failure. The rule, that the colour of the legs in the same pen should be alike, is always imperative; and, however good in other particulars, non-obeyance of this rule always leads directly to disappointment. The *Cochins* were very good. We would suggest, another season, that *Spangled* and *Pencilled Hamburgs* competing together is unadvisable, more especially as first-class birds were shown of either variety. The *Polands* were both limited in the amount of entries, and really indifferent in quality also; whilst in the *Sebright Bantams* all the prizes were withheld, as undeserved. The *Black*, and also the *White Bantams*, however, made ample amends for their predecessors.

In *Turkeys*, *Geese*, and *Ducks*, the present meeting stands alone at Chippenham. Of the latter, several most highly estimable pens lost position, entirely from want of condition, the ever-necessary attendant of quickly repeated exhibition without proper time being allowed for recovery.

The poultry show at Chippenham forms a part and parcel of the local agricultural meeting annually held there; and, although a digression from poultry matters, we cannot but allude to an excellent bounty connected with this institution, as a recognition of by-gone years of faithful servitude. Some fifty or sixty of the labouring classes received at the hands of the Presidents of this Society, not only a very befitting address, complimentary of their long good conduct, but likewise two or three sovereigns each, accompanied by a lithographed testimonial of their honest servitude (many for more than half a century). These were framed and glazed, and doubtless will, in future years, find a suitable position on the walls of many a labourer's cottage; whilst, possibly, they may there act as an incentive to good conduct in a rising family, anxious to sustain a father's, or mother's, good name. It is really pleasing to see how highly valued were these testimonials, and the great number of competitors who strove for their attainment.

We gave the prize list of the poultry last week. The Judge appointed was Mr. Edward Hewitt, of Spark Brook, near Birmingham.

OUR LETTER BOX.

WHITE EAR-LOBE IN BLACK BANTAMS (Economy).—The white ear is very desirable in a black Bantam. It is a very great point in exhibiting. They will become whiter after the bird is six months old. Ten ounces is a good weight for a cock six months old. By good weight, we mean a small one. Stint his growth, if you can, for the future. The legs should be black; but that is not an imperative rule. Whatever colour they may be, all in the pen must be alike.

GOUT IN POULTRY (A Country Quack).—We have seen a disease like gout in the feet and joints of Cochinchina fowls; therefore, the same may be in those of your Aylesbury Duck. If the swellings feel hotter than the other parts of the foot, it will confirm such suspicion. Give the duck two grains of calomel at night, and four drops of colchicum wine twice a-day for a week, and continue the treatment, if improvement is manifest. Keep the duck confined in a dry outhouse, and give it only soft food.

PRICE OF BARLEY (Economy).—We quoted the wholesale price at Mark Lane. It ought to be bought at the same price of any farmer in your neighbourhood, if you take a sack at a time.

CREWE POULTRY SHOW.—We have heard from another gentleman complaining that his prizes are not paid. This is not creditable to the Committee.

BLISTER ON SPANISH COCK'S EAR-LOBE (Henricus).—We think little of the blisters you mention, as you state that in other respects the bird is well. We are sorry to say, we think quite as little of the bird himself. If you want, as you say, "a few good Spanish," do not dream of succeeding with a cock that now has a good deal of red over the eye. A good hen will be thrown away upon him. Spanish cocks of real merit are now very plentiful, and we would advise you to purchase one of these, and a hen or two. They may be had much cheaper than they were twelve months since. With such you would probably succeed. Before we can answer your question, as to which breed would pay best, you must tell us what your object is, and whence you wish to derive your profit:—from eggs, or table poultry, or whether you are anticipating first prizes and pieces of plate. On knowing this, we shall be happy to give you all the information in our power.

LONDON MARKETS.—DECEMBER 20.

POULTRY.

The cause that we assigned last week for a slight rise in prices has maintained them since. The Turkeys, up to the time of our going to press, have hardly been as good as usual. The drought has prevented mills from working, and feeders have been at a standstill for want of meal.

	Each.	Each.	
Cock Turkeys ... 11s. 0d. to 25s. 0d.		Hares	2s. 0d. to 2s. 6d.
Hen Turkeys..... 6 0 " 9 0		Pheasants	1 9 " 2 3
Large Fowls 4 6 " 5 6		Partridges	0 9 " 1 3
Small ditto..... 3 0 " 3 6		Snipes	1 0 " 1 4
Chickens..... 1 9 " 2 6		Pigeons	0 8 " 0 9
Geese 6 0 " 8 9		Rabbits	1 4 " 1 5
Ducks 2 3 " 2 9		Wild ditto..... 0 8 " 0 9	
		Woodcocks	2s. 6d. to 3s.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	DECEMBER 28, 1858, TO JANUARY 3, 1859.	WEATHER NEAR LONDON IN 1857.					Sun Rises.	Sun Sets.	Moon R.ands.	Moon's Age.	Clock afterSun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.							
23	TU	INNOCENTS.	30.420—30.411	40—28	W.	—	9 af 8	55 af 3	20 af 1	23	1	48	362
29	W	Heliotropiums.	30.485—30.451	48—31	W.	—	9 8	56 3	37 2	24	2	17	363
30	TH	Leschenaultia formosa.	30.535—30.510	43—27	W.	—	9 8	57 3	54 3	25	2	46	364
31	F	Lobelia erinus maxima.	30.504—30.435	44—35	E.	—	9 8	58 3	9 5	26	3	15	365
1	S	CIRCUMCISION.	30.444—30.382	48—26	S.W.	—	9 8	IV.	20 m. 6	27	3	44	1
2	SUN	2 SUNDAY AFTER CHRISTMAS.	30.421—30.379	44—33	S.W.	.01	9 8	0 4	23 7	28	4	12	2
3	M	Myoporum parvifolium.	30.444—30.394	46—26	S.E.	—	8 8	1 4	12 8	29	4	40	3

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 43.1° and 32.7°, respectively. The greatest heat, 58°, occurred on the 28th, in 1855; and the lowest cold, 4°, on the 2nd, in 1854. During the period 118 days were fine, and on 78 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

As a little heat is necessary at this season, to grow any culinary vegetables that may be required early, it is advisable to collect leaves, which can generally be procured in most gardens in the country. When collected, they should be laid in a body, close together, to ferment: after three weeks, or a month, they will be in excellent order for use. For immediate use, to apply as linings, or to build new beds, it is necessary to have at hand some hot dung, which should be frequently turned over and watered, to dispel the fiery heat; one-part of this hot manure to four-parts of the leaves will make a good and enduring material for all hotbed and lining purposes. If the dung had one powerful heating, previous to its mixture with the leaves, no danger need be apprehended from impure vapours, if the most ordinary precautions are observed.

CAULIFLOWERS.—If the autumn-sowing failed, it will be advisable to sow in a box, to be placed in heat, and when the plants are of sufficient size, to prick them out in a frame, in a slight hotbed.

CELERY TRENCHES.—Dig out, to receive benefit from frost. In the spring, *Cauliflowers* may be planted in them, and dwarf *Peas*, or *Lettuce*, between, which will be off by the time the trenches are wanted for *Celery*.

CUCUMBERS.—A seed-bed should now be made, to raise young plants for hotbeds; a one-light box is generally of sufficient size for the purpose. After the bed is made, and the heat is raised, the dung should be forked up to the depth of a foot every other morning, until the burning heat has subsided.

MUSHROOM-BEDS.—Protect from wet and frost with a thick covering of dry straw. If it gets wet, it should be replaced by dry, fresh straw; and if mats are laid over the whole, they will assist in carrying off heavy rains, and prevent the straw from being blown about by high winds. Take the opportunity of a mild, dry day, to expose the beds to the sun and air: they should be covered up again in the afternoon.

POTATOES.—If young ones are wanted early, some *Ash-leaved Kidneys*, or *Early Frame*, may be planted in a slight hotbed. If it is not convenient to plant them immediately, they may be laid in any warm place until they begin to sprout.

RADISHES.—Sow in a slight hotbed.

FRUIT GARDEN.

FRUIT ROOM.—Look over it occasionally, and put aside for immediate use any fruits that are beginning to decay. Fruits of all sorts should be used when in perfection, as many of the choice kinds become insipid if allowed to get over-ripe before using. Any that do not appear to ripen in due season should be removed to a warm, dry place for a few days, to ripen them. The fruit-room should be kept as dry as possible, and, if frost is excluded, it cannot be too cool. If the place is damp, and apt to produce mouldiness, a few lumps of unslaked lime, in flower-pots, will absorb the moisture

from the surrounding air until it is entirely slaked. The same corrective to dampness may be applied with advantage in cold pits and frames. One bushel of lime will absorb five gallons of water.

GOOSEBERRY TREES.—Destroy all suckers that have made their appearance, and finish planting where required.

WALL TREES.—Prune the various sorts, except *Figs*; also standards, and fruit trees on espaliers.

FLOWER GARDEN.

If any beds remain to be dug, they should now be finished. By digging two spades deep, the plants root deeper, and produce finer flowers, than if the ground were not so prepared; and, should the summer prove dry, they will not require half the watering they would do if the beds were dug only half the above depth. The admixture of leaf mould would be an improvement to the soil.

Prepare composts, manures, &c., and turn them over frequently. Much of the value of all composts and soils, for plants in general, and for florists' flowers in particular, depends on their being sweet and mellow, which is only to be attained by time and frequent turnings.

EVERGREENS.—A top-dressing of rotten manure, or leaf mould, applied to any choice shrubs that are not growing as freely as they ought, will benefit them, working it slightly into the ground as far as the extremities of the roots may be supposed to extend, and covering it with a little fine soil during the operation.

FLOWER SEEDS.—Whenever the weather is unfavourable for out-door work, look over the sorts that have been collected during the past season, and clean them, previous to storing.

HALF-HARDY PLANTS.—Cover with coal ashes, or moss, the roots of *Erythrina laurifolia*, *Tagetes lucida*, *Bouvardia triphylla*, *Watsonia fulgida*, *Oxalis* of different sorts, *Alstroemerias*, &c., to protect them from frost.

PLANTING may still be performed, in open, mild weather, in bulbous roots, hardy perennials and biennials, and most sorts of trees and shrubs,—but more in the deciduous than the evergreens,—on all but heavy, or clayey, soils.

RHODODENDRONS.—Where they are grown in masses, and indicate an appearance of having exhausted the soil, a top-dressing of rotten cowdung, about two or three inches deep, should be applied as far as the roots extend. It will afford nourishment to this noble tribe of plants, and will keep the ground cool and moist, and prevent rapid evaporation in summer.

WILLIAM KEANE.

CROCUSES.

THIS day, the last Tuesday before Christmas, the first Crocus tops appeared above ground in my own garden, which reminded me of times long gone by, also of present times, and times to come. I merely went down the garden to take the mats off some lights, without thinking about gardening, or writing, of any sort. But the top of the Crocuses, for the first time this winter, was a text on

which I could not help writing. Are these Crocuses very early, or very late? The question is a puzzler. When I first sent in new Potatoes for Sir William Middleton's Christmas dinner, and prided myself on being so early with them, the worthy Baronet "took me off" at my own price, and declared that he had never had new Potatoes so late as mine all the years he had kept gardeners. After that, I took especial care that Sir William should have his first dish of early Potatoes for his first dinner of the new year; and all that he could urge to the contrary would not convince me that there was any merit in being the last on the list of early producers of new Potatoes. But, if I failed in being in at Christmas with new Potatoes, I never missed taking advantage of the first opportunity which offered for potting Crocuses, for forcing, after I once saw them above ground, as on the day when this is written. From having done so for ten years running, I hold it as a maxim, that Crocuses are never, under any circumstances, in a better condition for potting, to force, than at that very point of their progress; also, that if the bulbs had been three years established before then, and were in a healthy, thriving condition, the removal of them, in lumps and patches, with all their roots unimpaired, had no perceptible ill effects on the size, health, and duration of the flowers; indeed, I was often sure that the removal of the roots into pots, at that particular period, was in favour of a superior bloom. I am of that opinion still, and know that Crocuses, which are potted as I say, may be forced, to come in before others of the same kind which were potted last September and October, because they will bear more extra heat. I could give the reason why the same kind of Crocus can bear double the heat under different circumstances, according to the way the first part of the growth was brought about; but these are not the times to trouble readers with profound reasoning. Anybody who may have Crocuses in pots, from last autumn potting, may soon prove what I say, by taking up and potting a few of the first Crocuses they may see about the garden; and those who may wish to prove how easily they will force, and how much better the flowers will be from potting so late as this, must not lose much time now, as we may soon expect a ticklish frost.

So much for times past. For the time present, who would not think it a misfortune to have all the spring bulbs out of the ground at Christmas? Crocuses, Tulips, Hyacinths, Narcissus, Scillas, Dog's-tooth Violets, in all their vast varieties, not to bloom in profusion as our Lilies of the field and garden—that is, as spring flowers—would, indeed, be a blank. Well, we have not planted any of these bulbs yet, in the Experimental Garden; and we have not done so purposely, in order to be able, with a proof in hand, to tell the world that there need never be much fuss and hurry in planting these spring bulbs, in the autumn, before the beds and borders are hardly cleared of the bedding plants, and, above all, before the beds are properly prepared for the next summer's crop.

Suppose there is a large clump of Roses that are not doing very well, the end of October is early enough to remove them, to root-prune them, to select the best of them to be planted there again, and to buy newer, or more superior kinds, to make that clump, or bed, more telling next season. Then, that clump, or bed, has to be trenched; lots of the bottom soil must be wheeled away, and lots more of the best Rose soil, and the best rotten dung, must be wheeled to take the place of the bad bottom; then the top of the bed is to be mixed—half of fresh soil, half of the old soil, and as much of the rotten dung as one can spare. Then there is the planting the tallest plants in the centre, or at the backmost row, and the kinds are to be suited according to their different colours. All this takes a good deal of time and consideration, for people do not plant, in these days, haphazardly. Then, suppose ever so many things of that sort having to be done in one garden, in one year, there

is no time to do it, unless it is done between the taking up, or killing, of the bedding plants, and getting in the spring bulbs. Then, take the average of seasons, and where will you find a family who will agree to have the beds disturbed before the frost makes them look shabby; and in how many seasons out of ten that frost does not come till the middle, or end, of November? I have had the best bed, at Shrubland Park, out some years till the Christmas week; and, after that, had to change more than one-half of the soil in it for the next crop, before I could plant a bulb in it; so that that bed was not worse off than all our beds are just now, at the Experimental, as very many beds must necessarily be every year of our ivies, in all parts of the country.

But about that particular Rose-bed, just mentioned, you see how late it must have been for spring bulbs to have done much good in it the following spring, yet the arrangement was, that the Roses were to stand for three years unchanged, or unmoved. In the centre, between the middle Roses, were to be planted the taller Narcissus—as *Soleil d'Or*, *Double Roman* and *Bazelman major*, *States-General* and *Grand Monarque*—all white ones, except the *Soleil d'Or*. Then a row of tall double Tulips was to run round, but not very close—such as *Rex Rubrorum*, *Tournesol*, and *Mariage de ma Fille*, each in equal quantities. Then three rows of Hyacinths—scarlet, white, and blue; or *Waterloo* and *Grootvorst*, as scarlet, next the double Tulips. Then a white row of whites and blushes—as *Prince of Waterloo*, *A-la-Mode*, *Queen of England*, and *Anna Maria*, which are about the best sorts for that style of arrangement. The blues were in equal tints of light and gray blue, and dark blue—as *Amiens* and *Charles Dickens*, *Orondatus* and *Baron Van Tuyl*, two of the best shades of porcelain blue. In front of them, and in a closer row, were to be a complete ring of that prince of all early Tulips, the bold, majestic, large, brilliant flower, called *Vermillon Brillant*; and in front of all, a wide band of mixed Crocuses—a large yellow, a large white, and a large blue, and a streaked white—say, *Sir Walter Scott*.

Now, suppose that a running frost of three weeks sets in on the very night the Roses were planted, and before a single one of all these bulbs were got, or could possibly be got into a bed, and, after the frost, a whole week of slushy weather,—the gardener blowing his fingers, or scratching his head, in sheer vexation and despair,—and you will have one picture out of a thousand of different shades of merit, which are photographed every autumn in the country. Then, if you can realise the one thousandth-part of this style of gardening, you will agree with me, that it would be a happy release to get out of it altogether. I do not mean getting out of it by suicide, or in any other way, but by preparing the spring bulbs to come ready to our hand just at the precise moment we are ready for them, even were that not before the beginning of February. Pot them, to be sure, and pot them as early in August as you can get them over from Holland.

There is a grand secret in potting all bulbs which cast their leaves and rest awhile, long before it is natural for them to be planted in the open ground; therefore, pot as many as possible. But where on earth are all the pots to come from? or who can buy so many, and find standing room for them afterwards? Nothing of the kind. Not one single bulb for our show next spring has been potted. We never pot any of them, because we have got the knack of removing them in May, without hurting their leaves. The way we do—and a most excellent way it is—is this: when we pot all the best bulbs, as we think, for forcing and for blooming in the conservatory, we put them, pots and all, under ashes in the usual way; and then follow out the different kinds after them, like planting Potato sets with the spade. We make a drill in leaf mould and rotten refuse, as we would open a space in the front of digging for the Potato sets. The bulbs are put in that way, and two inches apart, and they are covered from one to two inches deep, according to their

size : here they root more freely than in any bed, and if there is a bad one among them, it rots there, and makes no gap in a bed or row. We never water them, or keep rain from them, or frost or snow either : some seasons they could be safely removed to the flower-beds as late as the middle of February, for it does not hurt a bulb the value of a straw, to be removed from place to place after it has made new roots, till the time above an inch of its leaves are exposed to the sun and air. Therefore, the safest and the best plan is, to put all the spring bulbs, which are out of the ground in summer, in the way of making roots as early as the beginning of September ; to make each kind with its proper name, or number ; not to stint them too much for room ; and to leave them till the garden is cleared and cleaned at leisure, and after that to take advantage of the first mild, dry weather, to have them removed, and planted, on some approved system, into the flower-beds and borders, to open free space for their long, succulent roots, and to put in with them some of the light, rich stuff in which they had been first set, to make their roots in time. If this is done with ordinary care, no one need know, or could make out, at the blooming season, that all the bulbs were not planted in the beds in the first instance, and as early in the autumn as it was needful for them to be. There is nothing new in this plan. Many of the best gardeners have been obliged to adopt it long ago ; but there is not one out of a thousand who grows such bulbs now-a-days, who has had the slightest idea that he could be easily accommodated, or that the plan is most useful to the health of the bulbs themselves. I have known such bulbs to be lifted in May, when in the full vigour of their leaves ; then to be planted on their sides in the kitchen garden ; to be kept watered as long as the leaves remained green ; to have the dead leaves cleared off ; and to let the whole stand in the ground the whole summer, and till the beds were ready for them, between Michaelmas and Christmas.

D. BEATON.

PEACHES AND NECTARINES.

HAVING attended several exhibitions this summer,—in the character of judge,—I must confess to astonishment at the general character of the Peaches and Nectarines which were exhibited. I must aver, that, on the average, they were finer twenty to thirty years since. So that, amidst all the progress in other fruits, which is considerable, there is certainly no advance here. I speak of them with regard to size, flavour, and colour. Of one thing we are assured, that it has been a most genial summer ; certainly beyond the average, as to the Peach. I have been much struck with the want of colour in most samples : pale yellow *Royal Georges* are but a pitiful sight, when we look back on those noble dark-red fruits of a score, or more, years since.

All this argues either improper soils, bad summer management, over-bearing, or insects. One or more of these, perhaps, combined. As I intend to offer any observations on them which present themselves, my readers must excuse me, if my remarks appear somewhat desultory.

It has been stated, of late, that Peaches and Nectarines succeed much better in the northern counties, than in the south ; and, as long as we do not go too far north, such statement may be correct. It is affirmed by some, that Lancashire is the best county ; and this success has been referred to saline matters. That they will succeed, and well, too, if rightly handled, in those parts, there is not a single doubt ; but I think I can show other reasons for it. Above all the enemies of the Peach, the red spider is, perhaps, the most to be dreaded ; and this insect is known to thrive and increase in proportion to the dryness of the atmosphere, in its general conditions. And, surely, it requires no waste of ink to prove that the air of Lancashire and Cheshire is of a more damp character, on the

average, than Surrey, Kent, or some other southern counties. That Peaches like a genial moisture, of a permanent character, in the air, is beyond doubt, or why do we take such pains to syringe, and otherwise apply moisture in our houses during the forcing process ? But it is not only a question of air moisture, but of root moisture also. There is much less rain, on the average, in the southern or south-eastern counties, than in those north-western ; and, doubtless, those in the south are frequently subject to drought at the root. This is a condition peculiarly favourable to the spread of the spider, not only in Peaches, but with all plants and trees. That inveterate enemy, the aphis, or green fly, too, is fond of warmth ; and I need not attempt to prove, that the average heat of Surrey or Berkshire is greater than that of Lancashire. I am of opinion, that many of the cultivators in the south do not provide proper soil for them. It is not rich composts that they require, but good, strong, and somewhat adhesive loam. We use such loams in the north ; but loams for the south should be twenty per cent. more adhesive than those in the north. I hope the readers of THE COTTAGE GARDENER will not be alarmed at the use of the term adhesive. I do not mean clayey soils, which cannot be separated without immense difficulty, but real sound loams, which cohere sufficiently to prevent injurious effects from sudden droughts. Such a loam, with some half-decayed leaf soil blended, will grow the Peach in high perfection, provided the subsoil is thoroughly drained. But if we make our soils two feet in depth over the platforms, the southern people should make theirs thirty inches. It is folly to adhere precisely to any given depth of soil that may be recommended in writing, like the depth of drains which some good people would have had ordained by Act of Parliament some years since : the depth of soils should be ruled by existing conditions—by the warmth of the climate, and the dryness of the subsoil in the locality.

Much of the success in Peach culture depends on the annual management of the roots. They must be allowed to roam to the surface, and not only that, but coaxed and nurtured when they get there. So that he who forbears to dig and crop over their roots, but, instead, spreads annually a coating of mulchy manure, is, of course, pursuing a practice the very antipodes of he who digs and crops, and never concerns himself as to whether it is congenial to the habits of the Peach to endeavour to produce surface fibres. And, surely, if we do not grudge a little manure annually, for a Cabbage plot, we need not refuse a little to the Peaches. Let it be well observed, however, that surfacing in this way is a very different affair from introducing a deal of manure in the soil at planting time. The latter we lose entire control over. Surfacing never promotes the production of watery spray.

I may here offer a few remarks on pruning these fruits. There can be little doubt that pinching, or stopping, is sadly neglected during the growing season, and that the principle might be pushed much farther than the practice, as commonly accepted. I am of opinion, that the old practice of disbudding is carried too far, and that few, but those shoots called robbers, should be entirely removed. The rest may be pinched to about two leaves, and it will be found that at the base of such shoots fine blossom spurs will be produced. Such shoots will, of course, sprout again ; and they should be pinched as long as they continue to do so—merely the last growth, as they must not be allowed to extend further.

It is well known to most, that the chief practice hitherto recognised in Peach management, has been to depend on the long annual shoots for the next year's crop. But, from later observations, I feel tolerably well assured, that finer Peaches and Nectarines may be obtained from spurs. How this may be, I know not ; but one fact, bearing on it in a collateral way, I may point to. It is well known, that young and luxuriant trees do not bear such fine fruit as those of more mature age and steady growth. Just

so, in comparison, appear lateral short-jointed spurs, as compared with the young and terminal points, where the sap acts with all its force. The only way in which I can account for this is, that the elaboration is more complete in the spurs than in the rapid growing points of young shoots: for rapid growth is frequently against the elaborate, or assimilative process, or otherwise grievously retards it. I have trees which have been thus treated this last summer, and they are clothed with numberless spurs, and to such an extent, that if every young shoot was pruned close back, I could ensure a crop of fruit.

I may as well offer a few observations on Peach forcing. Here, again, thorough cleanliness is necessary during the whole process. The house having this point secured, and the trees thoroughly dressed, according to former advice, what is called forcing may commence. Now, this commencement with the Peach must be very gradual indeed. Some persons little imagine what hidden processes are going on in the interior of the blossom-bud before it unfolds, which processes are necessarily the work of some time, if perfect blossoms are to be expected. And here I may observe, that much air moisture is necessary during this period. Where opportunity occurs, it is excellent practice to use fermenting materials inside the house. This I practice annually, and it is of much service. There can be no doubt that the gases arising from such manurial bodies impart benefits to the trees, which the vapour of mere water does not possess. I believe that a low night temperature is highly beneficial to the Peach. I have had a Peach-house with the fruit larger than big Peas, ranging from 35° to 40° on many nights, whilst a solar heat of 75° to 85° was encouraged towards noon and afternoon. They require a liberal day heat up to the stoning process,—say, from 65° to 75°; after that, caution must be exercised; hurry would not avail then, as the fruits, under whatever temperature, would stand still, as to growth, for a month or more. During all this time the lateral spray will require weekly attention; and here I recommend the pinching before advocated in this paper.

Another point of importance, is root watering. If the soil is properly constituted, a good deal of water will be required; of course, in proportion to the advancing heat, and the wants of the tree. Whilst the fruits are swelling, liquid manure is of the utmost importance, and both this and other water applications may be given at a temperature of 90°.

R. ERRINGTON.

MOVEABLE HOUSES—WOOD-SIDED HOUSES —SUNK HOUSES — COVERING FORCING BORDERS.

MOVEABLE HOUSES.—It is always a pleasant thing to get a squeeze of the hand from our friend Mr. Beaton; but a person would require to put a wire guard over his lips, if he thought for a moment that his friend was not only taking notes, but would “print them.” After what appeared from the Rev. F. E. Robinson (page 118), anything I could advance would be more in the way of minutiæ, than of principle. I recollect saying to our friend, “Why not build your house on blocks, laid *on*, not *in* the ground?” If these could be sunk half-way in the soil, it would be as well; but that I am somewhat doubtful about, if it came into the hands of the lawyers. Hence, wherever practicable, it would be best to have a written agreement with the landlord, before going to any extent in raising glass houses. There can be no doubt that a tenant might raise an orchard house, or a small greenhouse, on blocks, with perfect safety and security to himself, because any little heat that these might require might be communicated by a portable stove of some kind. If for forcing houses, &c., he has to sink into the ground, and use walls of brick, for stock-holes, setting boilers, &c., it is very questionable if he can touch such boilers afterwards—nay, more, if he falls in with a litigious land-

lord, he might get into trouble for making such a hole at all, or leaving such bricks and iron to annoy him. I once heard of a case, where removing such brickwork, &c., in order that the ground might be made as it was before, was made to involve the labour of a fortnight, though a day or two would have been sufficient, and threats were made for damages for annoyance besides. The law might prevent anything like glaring injustice; but having recourse to it at all would be sure to bring loss to the winning party. Unless, then, for houses requiring but little artificial heat, I should not like to build them without a previous arrangement with the landlord.

For such a moveable house, instead of laying the sill on the ground, I should prefer building it on blocks, and thus preserve the sill from decay; and, by the position of the blocks, secure the house from straining; and, at the same time, nearly entirely dispense with bracing and tying inside. For a span-house, forty feet long, fifteen feet wide, and ten feet in height to the centre,—I would first level and ram the ground where the blocks would be placed; then place four on each side,—say, each three feet in length, and eight to ten inches square,—formed of Oak, or Memel timber. These blocks—one at each corner, and two between, on each side—would be placed at right angles with the foundation sill. Thus, if the sill pointed east and west, the blocks would be north and south. One block more, two feet in length, might be placed in the centre of each end. On the centre of these blocks, the foundation sill, all round, should be secured with bolts; the blocks round the sides should be about thirteen feet apart; a board, fastened with screws, would go from the sill to the ground; and this, and the lower side of the blocks, would be the only parts more liable to decay than in a brick-walled building. For ventilating purposes, two ridge boards will be required, which, in addition to being supported at the ends, will be the better for two supports each along the centre. Four more blocks would be required for this; but, instead of that, it would be better to make the two blocks, in the middle of each side, seven feet long, instead of three, for receiving the sill, near one end, and a post, or strong iron rod, to the ridge board at the other end. On the sill, fix studs of any desired height, for receiving the wall plate; to that wall plate, the sashes may be screwed at one end, and the other end be screwed to the ridge board. A thin, bevelled piece of wood, three quarters of an inch in width, screwed over the junction of the sashes, will prevent all wet getting in there. I am supposing that sashes are used; in order to admit of being moved easily, four feet wide is as good a size as any. The sides of the sashes, as commonly made, would be strong enough for that width. But, to make extra sure, in case of heavy snowfalls, it would be desirable to have an iron bar (half an inch in thickness, and three quarters of an inch in width) going along longitudinally on each side of the houses, near the middle of the sashes, fixed to a stout stud at each end, and kept up by a brace from each of the centre posts that supported the ridge boards. The double ridge boards are to permit of ventilation being given between them; and, therefore, that space should be from twelve to fifteen inches in width. Stout cross pieces (four feet apart), placed between these ridge boards, will alike enable you to form from these a cowl coping,—which will throw off what water falls on to the glass,—and yet leave six inches, or more, between the coping board and the top of the ridge boards communicating with the open cavity between them. That cavity may be open, or shut, at pleasure, by having boards of the necessary height pivot-hung between each two of these cross pieces. Ventilation at the sides, and by the doorways, may also be secured.

The sides and ends may be made to suit circumstances and convenience. It would be desirable to have them in lengths that would be easily manageable. If the sides were not above three, or three and a half, feet in height,

they, and the ends to that height, might be all wood. If much above that height,—say, from five to six feet in height,—nearly, or fully, half ought to be glass. This could be made in pieces, in a similar way, and screwed to the studs. Where neatness, inside and outside, were great objects, and a little extra expense no great consideration, stout, neat studs might be placed at from four to six feet apart, and so many pieces of wood, or of glass and wood, made of the right size to fit in between them. To avoid openings in these, for air, the board, from the sill to the ground, might be hinged, and thus permit of air entering there all round when desired, or some of the spaces between the studs might be hinged. These, however, all refer to mere minutiae; and now I look forward with interest to the description of the plan by which ventilation is to be thoroughly secured, without fixing in the soil, and without bracing, or posts, or stays of any kind, inside the house. In small houses, instead of the wood ventilators at the ridge, the cowl coping might be made to fit over the opening, and the coping itself be raised by a lever, as in some excellent small span-houses at the nursery of the Messrs. Lee, at Hammersmith.

Where no great heating was required, boilers might be obtained, all of one piece, so as to contain the fire and draught, need little or no setting, or anything else, but a small funnel to take off the smoke; but even in such a case, unless our friend, and others, should procure good legal authority, I should not advise doing anything in the way of heating, without the consent, and in writing, of the landlord; as I recollect a case, in which a tenant was so much annoyed because he took a metal pipe through the end of a small greenhouse, connected with a moveable stove which he had placed in it, the landlord alleging that he was risking the burning of the whole of his property, that, to escape annoyance, he gave up the use of the stove, and terminated, as soon as possible, his tenancy.

WOOD-SIDED HOUSES AND PITS.—Several inquiries have been made, as to the suitableness of these, by correspondents who have wood at hand, and cheap, but would have to go a good distance for either stone or brick. The above remarks, as to Mr. Beaton's idea of a moveable house, as well as many most efficient houses, whose sides are all wood, will show that there is no objection, in such circumstances, to the use of wood. Unless the foundation sill is very large, it will be better to keep it off the ground by means of cross blocks. A brick, or stone, wall would just be better, rising a few inches above the surface. The idea of a house, thus formed of wood all round the sides, being very cold, is quite erroneous. Wood is a bad conductor of heat or cold, and, therefore, so far as the sides are concerned, such a house will have a more equal temperature than one formed of brick or stone. Provided the wood sides are perfectly close, I consider that a board two inches thick will keep out as much frost as a solid nine-inch brick wall. It would not be so secure, even when well painted, as a hollow nine-inch wall, because, though the tie bricks go from side to side, the air shut up in the hollows neutralises, to a great extent, the conducting powers of the bricks. Very cheap sides are formed with feather-edged boards, tarred well outside, and whilst wet daubed with as much as would stick of dry sawdust; or the boards are covered with asphalt felt, and that is tarred, and dusted with sawdust, or road drift. A very secure board wall is formed by placing one-inch thick, or thicker, boards, close together, without jointing them, and then tacking a thin piece of bevelled wood one inch and a half wide over the joints. This not only secures against all shrinking, but takes off the smooth sameness of the outline. Where the wood is no great object, and a great heat is required, both sides of the studs might be close boarded, and then the wall plate would enclose such a body of still air as no frost would easily penetrate. This would be especially beneficial in pits with rather high walls, and where a strong

heat was wanted within for Cucumbers, Melons, Pines, &c. Such wooden walls, in such circumstances, would be more economical for fuel, than walls of brick of a similar height. Little or no heat would be conducted through such double boarding from the inside, to the outside general atmosphere. If such wooden walls are painted, it ought only to be done when the wood is thoroughly seasoned and dried. Then painting with anti-corrosive, &c., will preserve the wood; but, if done previously, it will only hasten its decay. Some correspondents ask if they should not fill such a hollow between two walls with sawdust, as a non-conductor. I have no objection, especially if, by feather-edging, the boards are likely to have holes in the sides. If all is close, I should prefer leaving the space open, having found confined air a better non-conductor than anything that could be put in its place. Besides, if the sawdust, &c., should become damp, it would hasten the decay of the boards. If left free, a few small spaces should be made to open now and then, to prevent the air confined becoming too damp, if means are not taken to prevent the damp rising.

An "INQUIREER" wishes to know, "If Larch boards from fair-sized trees would do for such walls? and if the base ends of young trees some three inches and a half in diameter at six feet from the root end, would do for such studs, or stakes, to support them? and if the posts should be driven, or fixed, by making holes?" Yes, to the two first, if nothing better can be got; but the boards should be cut directly, and not used until the end of next spring, at soonest; and most, if not all, of the white wood should be removed. The posts, after being cut to the requisite length, should have all the bark removed, and be allowed to dry well. A chip on each side should be removed, to allow the boards to be straight. Suppose that from fifteen to eighteen inches of the stump end is to be fixed in the ground, then that should be either charred for two feet, or covered with tar, to keep it from rotting; but, if not pretty well dried previously, this preventive will only prove a promoter of decay. The stump end put in the ground, and well rammed, will be more secure than it could be made by driving. A wall plate, wide enough to throw the water off at the back and front, completes the whole.

Such a double wall, however, is chiefly for keeping heat in. If you attempted to throw heat inside, by placing a strong lining against the outside, you would find, as some did, that your success would be small. In such circumstances, you would wish you had a four, or a nine inch solid brick wall to work upon, for there you would find the heat from the outside would soon be conducted to the inside. One of the easiest pits to heat with hot water I ever met with, was one bounded by hollow brick walls, fourteen inches thick. It was sunk below the ground about as much as it stood above it; but the hollow walls prevented even the cold earth round it carrying away the heat. In some pits, the back walls of which are about four feet above the surface, and nine inches thick, and in which, at times, a high temperature is maintained inside by fire heat, I could scarcely have credited the heat lost by a radiation from the walls, if I had not covered them with two or three inches of straw, and then noted how warm the wall became beneath the straw, when the radiation of heat was thus prevented.

Although saying a word for wood, as *versus* brick and stone, seems heterodoxical in these go-a-head times, and though I would not wish to see wood-houses in our large princely establishments, I cannot forget, that THE COTTAGE GARDENER is intended not so much for those with next to unlimited means, as for those who wish to make the most of the simplest conveniences. The height of the ambition of many readers, is to have a little pit, where they could store their bedding plants, and, perhaps, have a little stove in it, or a pipe running through it, to be used in the worst weather. But, though they could

get over the price of sashes, they stumbled at bricks, wasting them ever so much in foundations, &c.; and there the matter stopped, just because they could not be convinced, that boards from one inch and a half to two inches in thickness would answer the purpose as well as bricks. A little straw tied round such a wood wall, in winter, would prevent the cold getting through it. One of such enthusiasts lately told me of an economical pit he had formed:—Position of pit, six inches higher than the surrounding soil; height of pit at back, two feet and a half; height in front, one foot; width of pit, five feet; posts all round and three feet apart; a board nine inches wide, and two inches and a quarter thick, nailed at the top all round, being fastened to each post. On this board, notches were cut for receiving the ends of rafters for the sashes, just as in a garden frame. Below this main ground board, the spaces were filled with any old loose boards, or slabs, with just a nail here and there to keep them from moving much; against these, at the back and ends, turf and dryish earth was rammed firm, so as to be fifteen inches wide at bottom, and six inches at top, within two inches or so of the top board; this was then covered neatly with turf, and a little gravel put round for walking. In front, the earth and turf were also rammed tight, until within three inches of where the sashes would come. After being smoothed, one-eighth of an inch, or between that and one-sixteenth of an inch, of gas tar was spread over it, to the width of three or four feet, having the tar thickest next the wood. This was then covered with roughish gravel, rolled, and, as the tar oozed through, covered with fine gravel and road drift, and rolled again, until not only a hard front was obtained, but one where water could not gain entrance. If wood and earth be two of the worst conductors of heat, then it would require no sage to perceive, that, for utility, this would be nothing behind the best solid-walled brick pit, though it would be much less lasting. In many positions, it would be more in unison with the general surroundings; and a good labourer could make the whole, except the glass sashes and rafters.

R. FISH.

(To be continued.)

GARDENERS' WAGES.

HALF-A-CENTURY's experience as under and head gardener, and as nursery foreman, has given me a considerable amount of knowledge on the subject of wages paid to gardeners. Being too old now to take charge of a garden—at least, a laborious part in it—I may claim the merit of impartiality on the subject. I am aware it is a delicate, and, perhaps, difficult subject; and, no doubt, I shall, in some cases, neither please gardeners nor their employers. However, it is with the best and most disinterested intentions that I write my opinion on this—to gardeners, at least—serious subject.

In the first place, I will state a broad and glaring fact, that gardeners, as a body, are, in general, underpaid. Young gardeners, learning the business, are expected to appear decently clothed, and to have bodily power to perform the heavier operations—such as digging, mowing, wheeling, lifting, &c. They have to look after the fires; water the plants; cover up, to protect from frost; and give air, to prevent too great heat—all important and essential operations for success in gardening. They also require books and instruments to render them competent to take a head place. They must study grammar, understand accounts, and be able to write a correctly-spelt and well-worded letter; and, besides these, they must be steady, sober, and diligent continually.

To accomplish all this, requires at least ten years' instruction and study, for there is scarcely a man that would be entrusted with a decent place before he was twenty-six or twenty-seven years old. And what are the wages this young man—so respectable and intelligent—receives during this long and tedious apprenticeship? If he obtains twelve shillings per week, with a bed in the back sheds, it is above the average; for there are too many places where he does not receive that much, little though it be. It is true there are honourable exceptions, where under-gardeners are cared for—books found, and comfortable rooms provided.

Now, I would propose to every kind-hearted employer, to either raise the wages of young men to, at least, fifteen shillings per week, or to give them an equivalent, in the shape of milk, vegetables, books, fire, soap, towels, candles, &c.

I advise young men in the profession, as a sincere friend, that when they accept a place in a garden, not to expect too much, but to be content with what is given them, and to do their duty in that state of life which is appointed for them, and thus deserve that encouragement which good conduct and diligence is sure to command. A fault-finding, discontented man, will not only be unhappy, but will never make his way in the world.

In this wealth-creating country, the number of employers of gardeners are annually increasing, so that young men need not fear not obtaining decent places—though I would by no means advise too many to enter this business; for it is a fact well understood by political economists, that the supply regulates the price of any article, so that the greater the number of gardeners, the price of their services will be lowered accordingly, however well the employers may be inclined to pay. It is not likely that a gentleman will give a hundred a-year to his head gardener, when he can get one equally clever for an annual payment of seventy or eighty pounds.

Yet, let it be remembered, that when a man has spent the first ten years of his working life to obtain a knowledge of the business, he ought to be well paid when he comes to put into practice the knowledge and experience he has so hardly acquired. A mere mechanical business—such as that of a mason, carpenter, bricklayer, or painter—may be easily learned in five or six years; and he enters upon full wages—from four to five shillings a-day—the moment he is of age. He has only to repeat the operations he had learned in his short apprenticeship. How different is the entry into the full exercise of his skill by the head gardener. He enters upon new ground, he has different means to study; perhaps, a different climate, soil, and situation. He has his men, if any, to manage, and alterations to make; all requiring quick apprehension, firm decision, and all the powers of an active, foreseeing mind, to succeed in the place, and give satisfaction to his employer. Besides, he must be quite a superior character in respect to morals. He must be of steady, business-like habits, and able to keep accounts; and, above all, he must be strictly honest.

Now, I need not, after this fair statement of these two classes of men, do more than observe, that there is a wide difference between them. The head gardener is expected to be—nay, must be—so clothed as to appear respectable, because he is constantly liable to be called upon to speak to, and conduct his employers and ladies and gentlemen through the gardens; and often has to explain to them many curious properties of plants, and the reasons for the various operations of gardening. When are such refined subjects descended on by the mere mechanic? Not that I would by any means depreciate worth and intelligence in any class of men; but I do claim a higher grade and place for the accomplished gardener; and I think, and honestly believe, that his services are justly more valuable, and ought to be better paid: he ought to have wages sufficient to enable him to save a competency for old age.

I am aware that there are amongst gardeners, as amongst other large classes of men, various grades and degrees of merit. There are too many mere blue-apron pretenders—men who will take any wages; and, also, there are small places where such men are employed, merely because a really good, steady gardener would not accept them, unless compelled by the pressure of having a large family to provide for, he—rather than let them starve—will take lower wages than he knows he is justly entitled to.

Such pitiable cases come across me in my journeys, sadly too often; but let us hope for better days, as I always say to such of my brethren as are so unfortunately situated. Let such make their case known, and there are plenty of employers and nursery-men who would be glad to succour them. I have been often applied to by ladies and gentlemen for gardeners, and have been requested to send a *working gardener*; by which term, I was given to understand, they wished their head gardener to dig, and mow, and wheel manure, and perform other common labour. I then asked the question, how much a-day do you pay your labourers? The answer was, two shillings, or perhaps a six-pence more. I remarked that it was inconsistent to expect their head man—to whom they were paying sixty, or seventy, or more, pounds a-year—to do work which they could get done for labourer's wages. It was, I said, a waste of his acknowledged

and valuable time, to allow him to do such work. A good gardener will always find work to do, which the mere labourer knows nothing about. I am happy to say, I always found this argument convincing.

In large places,—such as Chatsworth, Trentham, Bicton, and many others,—where foremen are kept, the head gardener has plenty to do, to keep everything going on right, and the men to their duties, without any kind of labour whatever; but there are hundreds of places where the gardener must labour with his own hands, and his proper work is pruning, propagating, sowing seeds, potting, planting, and such-like operations, that require skill and knowledge of various kinds, to bring out a given and desired result.

I do hope yet to see the day when really good gardeners will be more highly valued, and better paid; and, in the meantime, I say to such, go on quietly and perseveringly, and do not fear but you will obtain your due reward.—T. APPLEBY.

VINE MILDEW.

YOUR correspondent "A. A." (See page 150) writes as follows:—"I find a letter containing advice as to the cure of mildew in Vines, which advice, taken as it stands, is, I think, rather calculated to mislead. The writer of it recommends the application of sulphur to the pipes and flues while hot, which, without doubt, will effectually cure mildew; but if the pipes are made too hot, or too great a quantity of sulphur applied, it will injure the Vines as well." He further states, "I once had some Cucumbers destroyed by red spider" (a very common case); "so I pulled them up, made the pipes as hot as possible, and painted them thickly with sulphur, keeping the pit closed during the time. When I opened it, the fumes were so strong, that I was obliged to leave it open for some time before I could work in it with any comfort; and I feel convinced, that had there been any plants in it, they would not have been worth much after the operation was finished. With the pipes, or flues, moderately warm" (the advice given by me), "a thin paint of sulphur may be beneficial."

My advice on this subject was, that I would not recommend dusting the bunches, or syringing the leaves, with sulphur, or anything that has an unsightly appearance. But the method I would advise, is, simply the one practised by myself with the best results—viz., washing my hot-water pipes and flues regularly over every fortnight with sulphur during the forcing season, when the pipes, or flues, are sufficiently hot to evaporate it. My advice was, not to make the pipes as hot as possible; had that been requisite, I should have so stated: but I contend, that the words sufficiently hot to evaporate were all that was requisite. The quantity of sulphur to be used entirely depends on the size of the house, or the quantity of piping used in heating it. My early vinery has six rows of 4-inch piping, besides the chimney flue. Now, these have been all coated over at one time, so that, if there was any danger in the quantity of sulphur used, I think I should have experienced it before this. But, bear in mind, I did not, like "A. A.", make my pipes as hot as possible,—but merely sufficiently hot to evaporate the sulphur,—or, like "A. A.", I fear I should not have found the fumes of the sulphur as pleasant to smell as the essence of lavender.

"A. A." will find, in the latter part of my article, that I act with discretion when using sulphur. When I recommended the gentleman at Dulwich to sulphur his flues, I advised him to have his plants removed. He did so, and all ended well.—E. BENNETT.

FAILURE OF THE CALCEOARIA.

I SEE, in THE COTTAGE GARDENER, a statement of the failure of Calceolarias, by Mr. Robson. Now, for the last two seasons they have done very badly with me. All the yellow kinds I have tried, with the exception of *amplexicaulis*.

In 1857, I planted two beds, holding 115 each, in the Italian garden, with *Prince of Orange*. They died off, one after the other. Then I replanted the beds with *Trentham Yellow*, which seemed to do pretty well for a time, but soon went off in the same way as their predecessors, though not all of them.

Seeing them dying off, and the beds getting bare, I was in a fix, for I had planted out all my other Calceolarias.

A friend, seeing my condition, helped me all he could, by taking

some out of his borders, and sending them to me. I filled the beds the third time, but in vain. Now, what was I to do? As a last resource, I took up two long rows of *amplexicaulis*, which I had planted out in the borders on the ribbon fashion. I took them up with the greatest care, and filled up the beds once more. Although I had done all that lay in my power as regards attention, in watering the previous planted ones (I did the same with *amplexicaulis*), still I lost a few, and the beds did not look as I could have wished them until September.

This season, 1858, I thought I would not plant the large beds again. I filled two small ones, thinking I had had so much trouble the previous season, that small beds would be better to fill than large ones, if they should do badly again. And they did do as badly as ever; but I had a good many propagated in the autumn, so as to fall back upon, if wanted, of *Trentham Yellow*, and *Aurea floribunda*.

Now, I was filling up the beds every few days, for they kept dying off as in 1857. This grieved me so, that I said I would never rely on Calceolaria as a bedding plant again.

Now for *amplexicaulis*. As it did the best for me in 1857, so it has been the favourite of 1858, having eight beds in the rosery, which we plant, in order to put in under the standard Roses. I filled four of them with *amplexicaulis*, and four with *Robinson's Defiance Verbena*, alternately, and did not lose a single plant. The soil in both the rosery and the Italian garden is much the same, so that, I think, the little shading by the Roses has been favourable to the Calceolarias this season; though *amplexicaulis*, as a bedder, will be a favourite with me until we can find a substitute for the Calceolaria.

This failure is a great pity, for yellow Calceolarias contrast so well with Scarlet Geraniums, Verbenas, and many other inmates of the flower garden; and, I fear, we shall have a difficulty in finding their equal.

The soil here is of a light sandy nature, resting on gravel and sand, and the soil cannot be termed worn out, as the place has not been made above nine years. There are other places in this neighbourhood, where Calceolarias have done as badly as with me.

I should be obliged, if any of the readers of THE COTTAGE GARDENER would say, whether *amplexicaulis*, or what other variety, has done the best the two last seasons with them.—J. EASTWOOD, Didsbury Lodge, Manchester.

COTTAGE BEDROOM WINDOWS.

As, from the title of your periodical, you are professedly the exponent of "cottage" wants, I feel that no apology is due for drawing your attention to a most vital desideratum to very many of our rural cottages of the old type—viz., windows that will open, and that, too, on a principle which I have adopted in the garret windows of my own house lately, with a result as surprising as it has proved satisfactory.

In a deep wooden window-frame, I have a casement window, swinging on a pivot fixed on each side, and opening inwards at the top. The opening is regulated by a thin curved bar of iron, notched every second inch at the lower edge to catch on the bottom edge of an eye, through which it passes; the bar, by a joint, being attached to the inner side of the bottom of the window-frame.

On each side of the window is a cheek of wood, resting on the sill, and tapering upwards to the pivot, from a base of ten inches or a foot wide to the pivots. The pivots rest and act in crescent grooves, let into the frame on either side. By this most simple process, at a cost of a few shillings only, the village carpenter and blacksmith can effect for anyone, what they have for me, a great sanitary bedroom - window improvement, safely available in all weathers, too, which no other window casement is; for the side cheeks prevent any rain from drifting in sideways, even on the roughest days; and on hot summer nights—when the sleepers in rooms with no fire-grates, and with ordinary windows, are suffocating from exhalations and confined animal effluvia—the occupants of a bedroom window on this plan can, by simply projecting the bar two or four inches, admit the cool and pure external oxygen from below, and let the carbonic acid of the vitiated internal air escape by the upper part of the casement. Add to which, this further advantage—viz., that by the bar being curved upwards, and slightly hooked at the unattached end, it cannot be drawn through the iron eye or loop fixed to the sill; and, consequently, a cottager, if he lock his door, may safely leave his window open, when he goes for a time from home, and wants to maintain the while a continued ventilation. When we

remember, that in a bedroom twelve feet by ten feet, and nine feet high, the cubical measure of air is 1,080 cubic feet, whereof 216 cubic feet only are oxygen, or vital air; and that by medical statistics, it is estimated, that in a night of ten hours a man will consume thirty, a woman twenty-five, and a child seventeen cubic feet of oxygen respectively (or seventy-two in all), what must be the nauseating state of that atmosphere in the morning, of which one-third has been thus withdrawn, to be replaced, too, by poisonous carbonic acid of equivalent amount, and that heated with the addition of animal effluvia, tainting the condensed air around, and contaminating the remaining two-thirds of vital air in the said room, especially around the sleepers: in hot weather, when these air-corrupters rise to the ceiling the less readily, the oppressive consequences become, alas! but too often distressingly enervating before the morning dawn, when the sons of toil are necessitated to renew their daily labour. How can the women but be pale and languid, and the children sickly-looking, under such circumstances? And how, pray, can such sleep prove to them "nature's sweet restorer," as a merciful God intended it should prove?

Should any of the inmates of a bedroom—so deprived of all means of ventilation—chance to fall ill, and have to keep their bed for days, perhaps, together, alas! indeed, and woe betide that unhappy cottage, for naught but a merciful Providence can then avert therefrom that endemic typhoid fever, which a damp-floored living-room and close bedroom generate—nay, the nidus of a fell epidemic may be there formed, and extend by infection over all the vicinity.—H. AUSTEN, *Lieut.-Colonel.*

NEW OR RARE PLANTS.

OSBECKIA ASPERA (*Rough-leaved Osbeckia*).

A stove plant, long cultivated at Kew, where it is very showy in summer and autumn. Native of Ceylon and Indian peninsula. Blossoms purple.—(*Botanical Magazine*, t. 5,085.)

MONSTERA ADANSONII (*Perforated Monstera*).

Our readers will realise this plant, when we state, by various botanists it has also been called *Arum hederaceum*, *Calla Dracontium*, and *Dracontium pertusum*. It was introduced by Phillip Miller, in 1752, and is a native of the West Indian islands and tropical America. It is a climbing plant, attaching itself to the trunks of trees by fleshy fibres, like Ivy. Flower, or spathe, cream-coloured.—(*Ibid.*, t. 5,086.)

APTERANTHES GUSSONIANA (*Gussoni's Apteranthes*).

Called also *Stapelia Gussoniana*, and *S. Europaea*, also *Bircherosia Munbyana*. Native of the island Lampedusa, near Sicily; at Almeria, in Spain; and elsewhere. It is a greenhouse succulent, flowering in September. Blossoms pale yellow.—(*Ibid.*, t. 5,087.)

LOBELIA TRIGONOCaulis (*Triangular-stemmed Lobelia*).

Native of North-Eastern Australia, near Brisbane River; and Mount Lindsay, Moreton Bay. Introduced by Messrs. Low and Son, of the Clapton Nursery. It is of great merit as an ornamental bedder; and was recently noticed in our pages by Mr. Beaton.—(*Ibid.*, t. 5,088.)

FIELDIA AUSTRALIS (*Australian Fieldia*).

Native of the Blue Mountains of New South Wales, where it was discovered by Mr. Caley, in 1804. It flowered at Kew, in a greenhouse, during September, 1858. Blossoms very pale yellow.—(*Ibid.*, t. 5,089.)

BILBERGIA LIBONIANA (*Libon's Bilbergia*).

Native of Rio de Janeiro. Flowered in the stove at Kew, during August, 1858. Sepals red, petals purplish blue.—(*Ibid.*, t. 5,090.)

THE ALMA POTATO.

IN answer to "J. C. M." I beg to state, that I believe the *Alma* Potato was raised five years since, but was not named until the season after that great battle was fought. It was raised by an amateur (Mr. Grimley), and made a present to me by the then gardener at Thorngrove, formerly the seat of Prince Lucien Buonaparte, who informed me it was raised as described in my list in THE COTTAGE GARDENER. It was not raised from the

old *Ash-leaf*, but from a variety of *Ash-leaf*, called, about here, the *Second Ash-leaf*, a more productive variety than the old one. I do not happen to know of any other cross-bred variety, besides the one named, although I know of several good seedling varieties. I shall feel a great pleasure if "J. C. M." will give me his address, to forward any variety, for the purpose named, that I have still left by me. I forwarded nearly fifty varieties that I then grew for experiment, two years since, to the Continent.—E. BENNETT.

CELERY BECOMING HOLLOW.

A CORRESPONDENT in the west of Lancashire complains of his Celery becoming hollow and pithy, and asks for advice in the matter, as he says his ground is good, and manure plentifully used. I should not have been at all surprised at this question being asked anywhere else than in Lancashire, for it is too common an occurrence to meet with indifferent Celery. But, being led to believe that the county in question was famous for that article,—as for its Potatoes, Gooseberries, and, I might add, Peaches,—it is only another instance of the many cases of exception; for, however remarkable a district may become for producing certain things, there are sure to be some of an inferior description as well. Several causes generally conspire to make it so; but, in the present case, it certainly appears that the cultivator has done his part to make it good; and, being unsuccessful, it is only fair to examine the cause of its being so.

Like everything else, an undue degree of grossness tends to make a plant more delicate, long-jointed, pithy, or hollow. Celery, though it is as proverbial as an alderman for its relish of good living, is subject to this infirmity. But, as the taste for large Celery demands this high feeding, the careful cultivator bestows more than ordinary care to have the seed of the best possible kind—that is, of the kind most remarkable for its solidity. Now, this qualification is, it is feared, not too rigidly adhered to by seedsmen. The best varieties of Celery, like that of most other plants, yield less seed than indifferent kinds. The consequence is, that it too frequently happens that the commoner sort is mixed with the best; and plants too prone to run to seed, or become hollow, are the result. The latter failing is complained of by our correspondent, whose case is far from being a solitary one, for Celery more or less hollow has long been an evil which only careful management can guard against. Nevertheless, it can, in a great measure, be done, for good solid Celery is certainly more plentiful than it was twenty years ago, the means of having it so being in the hands of most growers of that article.

Having said that good solid Celery seeds less abundantly than the commoner sorts, it is also right to say, that it is also more liable to those mishaps which carry off plants in the course of seeding—I have seen a whole row die off in May. Consequently, good kinds of Celery are more difficult to perpetuate than may at first be supposed. The best and surest way, perhaps, to have it pure, is, to occasionally grow a few plants, and save the seed at home. The best plants for this purpose are those from the latest sowing of the preceding year, and which have been but very little blanched; in fact, some of the plants that are put out on plain ground, only a few inches apart, to furnish the green top used occasionally for flavouring certain dishes. These late plants are much more hardy than the forward ones, that have been blanched almost to death. Take especial care, however, that the kind be good; and, if it be necessary to transplant them in spring, let them have plenty of room, and a large ball of earth to each root. Few plants produce seed more plentifully than Celery, when it is in a healthy and vigorous state, and few seeds keep longer unimpaired by the action of time and the other contingencies consequent on long keeping. At the same time, it is not prudent to depend on old seed at all times; for, though it will germinate, the plants are said to be more liable to run to seed, than those raised from that which is younger. I cannot positively affirm that this is the case, having had very good Celery from seed six years old and more. But there are so many other reasons, or causes, bearing on the success of the crop, that we often mistake the real one for some other.

During the past summer, the Celery here (Linton) scarcely made any progress at all from June to the end of September, after which it grew rapidly, the long dry season and dry soil being unsuited to it. Now, as a very rapid growth is at variance with solidity in a general way, where not kept in check by the goodness of the variety grown, it follows that the seed of our correspondent had been more or less spurious, and not old; for

the latter, as I said before, would be more likely to produce plants running to seed in autumn, than with hollow stems. It is only necessary to be more careful to secure a better description another year; for, though many kinds of garden seeds—as Onions, Kidney Beans, Peas, and other things—degenerate but little, their produce is dependant more on cultivation and the nature of the season.

The merits of Red Beet and Celery are in a greater measure due to having seed only of the best variety. Hence, many cultivators grow seeds of these two articles for their own use, and they often find it to their advantage to do so. At the same time, it is also proper to have an exchange from a distance; for, however carefully the kind may be attempted to be perpetuated on the same spot, it is sure to degenerate; hence, in seed growing, as well as in breeding of animals, crossing is necessary. But this has been shown before.—J. ROBSON.

HODSON'S INDELIBLE GARDEN LABEL.

LAST week an advertisement of these labels appeared in our columns, and we have since received specimens and information which induce us to recommend them to our readers. The names required are printed upon them, the labels being of a prepared cloth, which does not curl up by exposure to the vicissitudes of the seasons; and we have before us one which for three years has been begrimed by exposure to London smoke in the open air, and yet the inscription is perfectly legible. There is a metallic-lined hole in each label, through which a piece of string is passed, for attaching it to the plant.

CHRYSANTHEMUM DRESSING.

As one of the exhibitors of the Chrysanthemum at the Crystal Palace, on the 6th November, I trust I may be permitted to offer some observations on the contents of a letter which appeared in your impression of the 30th of November, from "WILL WORTH."

"WILL WORTH" exhibited at Stoke Newington, on the 2nd of November, obtained a fourth prize, and was beaten by Mr. A. Wortley, Mr. James, and myself—all three holders of silver cups, gained in hard-fought contests with the best growers of the day. We met again at the Crystal Palace on the following Saturday, with the same result. After speaking, as I think, most unfairly, of the Crystal Palace Exhibition, with which most people were highly delighted, "WILL WORTH" says, "I do not write invidiously, because, at the Crystal Palace, I did not get a prize. The twelve flowers I showed were the very same for which, at Stoke Newington, I was awarded a fourth-class prize; but not being touched up again,—replugged and retubed,—of course, amongst their newly-dressed neighbours, they cut but a so-soish figure."

That his miserable flowers cut but a "so-soish figure" by the side of ours, no one who saw them can deny; but the reason assigned for the difference is incorrect, because our flowers, like his own, were the very same, and in precisely the same condition as when we showed them at Stoke Newington.

"WILL WORTH" condemns as *dishonest* the system of "dressing," but adopts it himself! In his letter in your columns, to which I have already alluded, he confirms the *honesty* of "dressing," if there be any meaning in the following:—"I am told that, try as I may, I shall never write down the 'dressing' practice. *Nous verrons*. The system is dishonest, excepting amongst exhibitors themselves." Why, this is the very essence of inconsistency, to call it by no harder name!

"Throw away the steel and ivory tweezers," by all means. But let "WILL WORTH" set the example by throwing away his own, purchased, be it remembered, about the time his letter, condemning the use of them, appeared, on the 9th of October!

Any one reading his ridiculous tirades against "dressing," would suppose that "dressing" obtains only with the Chrysanthemum. Nothing of the sort; "dressing" obtains with almost every florists' flower;—it is a practice sanctioned and adopted by the best and most respectable florists in the country. Why, then, should "WILL WORTH" select one of the least perfect of Flora's offspring for his attack, when there is a wider field open to his ambition, and better game to run down?

I am neither the eulogist of the practice, nor the advocate for its suppression. The abrogation of the system of "dressing"

might open the door to every species of chicanery, and be fruitful of discontent, envy, and uncharitableness. Let us then—

"Rather bear those ills we have,
Than fly to others that we know not of."

Floral ability is not an inspiration: it is the result of practice and observation. For a novice, "WILL WORTH" has accomplished more than might have been expected of him. *Amor vincit omnia*. Let him persevere. Flora is coy, she must be wooed, and not unsought be won.—G. SANDESSON, *Chairman of the Stoke Newington Chrysanthemum Society*.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 184.)

CHERRIES.

ADAMS' CROWN.—Medium sized, obtuse heart-shaped, and slightly compressed on one side. Skin pale red, mottled with yellow. Stalk two inches long. Flesh white, tender, juicy, and richly flavoured. An excellent bearer, and a first-rate early cherry. Beginning of July.

ALL SAINTS' (*Autumn-bearing Cluster; De St. Martin; Toussaint*).—Small and oblate. Skin red, becoming dark red as it hangs on the tree. Stalk two inches long. Flesh white, reddish next the stone, juicy, and acid. This is generally grown as an ornamental tree.

Amarelle du Nord. See *Ratafia*.

AMBER GEAN.—Below medium size, generally in triplets; obtuse heart-shaped. Skin thin and transparent, pale yellow, or amber, tinged with delicate red. Stalk slender, an inch and a half long. Flesh white, tender, and juicy, with a rich, sweet, and delicious flavour. Beginning of August.

Ambrée. See *Belle de Choisy*.

Amber Heart. See *White Heart*.

AMERICAN AMBER (*Bloodgood's Amber; Bloodgood's Honey*).—Medium sized, growing in clusters; roundish, inclining to heart-shaped. Skin thin and shining, clear yellow, mottled with bright red. Stalk an inch and a half long. Flesh amber coloured. Beginning of July.

AMERICAN DOCTOR (*The Doctor*).—Medium sized, obtuse heart-shaped. Skin clear yellow, washed with red. Stalk an inch and a half long. Flesh yellowish white, tender, juicy, sweet, and richly flavoured. End of June. I have named this "American Doctor" to distinguish it from the German "Doktor Kirsche."

Angleterre Hâtive. See *May Duke*.

Anglaise Tardive. See *Late Duke*.

Ansell's Fine Black. See *Black Heart*.

ARCHDUKE.—Larger than May Duke, obtuse heart-shaped, with a deeply-marked suture at the apex, diminishing towards the stalk, and very slightly pitted at the apex. Skin thin, pale red at first, but becoming dark red, and ultimately almost black. Stalk very slender, an inch and a half to two inches long. Flesh deep red, very tender and juicy, sweet, and briskly flavoured; but sugary when highly ripened. Middle and end of July. Tree somewhat pendulous when old.

Armstrong's Bigarreau. See *Bigarreau de Hollande*.
D'Aremberg. See *Reine Hortense*.

BAUMANN'S MAY (*Bigarreau de Mai*).—Below the medium size, ovate, inclining to cordate, and irregular in its shape. Skin of a fine dark red colour. Stalk about two inches long. Flesh purple, tender, juicy, and excellent. Ripe the middle of June.

Belcher's Black. See *Corone*.

BELLE AGATHE.—Small, produced in clusters; heart-shaped. Skin dark crimson, with minute yellow mottles over it. Stalk an inch and a half to an inch and three quarters long. Flesh yellowish, firm, sweet, and very

nicely flavoured. This is a small Bigarreau, which hangs on the tree as late as the first week in October; and neither birds nor wasps touch it.

Belle de Bayay. See *Reine Hortense*.

Belle de Chatenay. See *Belle Magnifique*.

BELLE DE CHOISY (*Ambrée*; *Dauphine*; *Doucette*; *De Palembre*).—Large and round. Skin very thin and transparent, showing the texture of the flesh beneath; amber coloured, mottled with yellowish red, or rich cornelian, next the sun. Stalk an inch and a half to two inches long, rather stout, swollen at the upper end. Flesh amber coloured, melting, tender, rich, sugary, and delicious. Early in July.

Belle de Laeken. See *Reine Hortense*.

BELLE MAGNIFIQUE (*Belle de Chatenay*; *Belle de Sceaux*).—Very large, roundish-oblate, inclining to heart-shaped. Skin clear bright red. Stalk an inch to an inch and a half long. Flesh yellowish, tender, and sub-acid. Used for cooking. End of July.

BELLE D'ORLEANS.—Medium sized, roundish, inclining to heart-shaped. Skin pale yellowish white in the shade, but of a thin bright red next the sun. Flesh yellowish white, tender, juicy, and rich. Beginning and middle of June. One of the earliest and richest cherries.

Belle de Petit Brie. See *Reine Hortense*.

Belle Polonaise. See *Griotte de Kleparow*.

Belle de Papeau. See *Reine Hortense*.

Belle de Sceaux. See *Belle Magnifique*.

Belle Suprême. See *Reine Hortense*.

BIGARREAU (*Graffion*).—Large, and obtuse heart-shaped, flattened at the stalk. Skin whitish yellow, marbled with deep bright red next the sun. Stalk stout, two inches long, deeply inserted. Flesh pale yellow, firm, rich, and highly flavoured. Stone large and round. End of July.

Bigarreau Gros Cœur. See *Monstrous Heart*.

BIGARREAU DE HILDESHEIM (*Bigarreau Tardif de Hildesheim*).—Medium sized, heart-shaped, flattened on one side. Skin shining, pale yellow, marbled with red on one side, but dark red on the other. Stalk two inches long. Flesh yellow, very firm, not particularly juicy, but with an excellent sweet flavour. Ripe the end of August and beginning of September. An excellent late cherry.

BIGARREAU DE HOLLANDE (*Spotted Bigarreau*; *Armstrong's Bigarreau*).—Very large, regularly and handsomely heart-shaped. Skin pale yellow on the shaded side, but of a light red, marbled with bright crimson, on the side exposed to the sun. Stalk an inch and a half long, stout, inserted a little on one side of the fruit. Flesh pale yellowish white, juicy, and sweet, with an agreeable piquancy. Stone small for the size of the fruit. Middle of July.

Bigarreau Lauermann. See *Bigarreau Napoléon*.

Bigarreau de Mai. See *Baumann's May*.

BIGARREAU DE MEZEL.—Very large, obtuse heart-shaped, and flattened on the sides. Skin shining, thick; at first pale red, but becoming blackish purple when ripe. Stalk two inches long, slender. Flesh firm and juicy, sugary, and richly flavoured. End of July and beginning of August.

Bigarreau Monstrueux. See *Monstrous Heart*.

BIGARREAU NAPOLEON (*Bigarreau Lauermann*).—Large, and oblong heart-shaped. Skin pale yellow, spotted with deep red, marbled with fine deep crimson next the sun. Stalk stout and short, set in a narrow cavity. Flesh very firm, juicy, and of excellent flavour. An abundant bearer. July and August.

Bigarreau Tardif de Hildesheim. See *Bigarreau de Hildesheim*.

Black Bud of Buckinghamshire. See *Corone*.

Black Caroon. See *Corone*.

Black Circassian. See *Black Tartarian*.

BLACK EAGLE.—Medium sized, obtuse heart-shaped, compressed at both ends. Skin deep purple; when ripe nearly black. Stalk an inch and a half long, and slender. Flesh deep purple, tender, very rich, and juicy. Beginning of July.

BLACK HEART (*Ansell's Fine Black*; *Early Black*; *Lacure*; *Spanish Black Heart*).—Above medium size, heart-shaped, rather irregular, compressed at the apex. Skin dark purple; deep black when quite ripe. Stalk an inch and a half long, slender. Flesh half tender, rich, juicy, and sweet. Early in July.

Black Morello. See *Morello*.

Black Orleans. See *Corone*.

Black Russian. See *Black Tartarian*.

BLACK TARTARIAN (*Black Circassian*; *Black Russian*; *Fraser's Black*; *Ronalds' Black*; *Sheppard's Seedling*).—Large, obtuse heart-shaped; surface irregular and uneven. Skin deep black. Stalk an inch and a half long. Flesh purplish, juicy, half tender, and rich. Stone small, roundish oval. Succeeds well against a wall, when it is ready by the end of June.

Bleeding Heart. See *Gascoigne's Heart*.

Bloodgood's Amber. See *American Amber*.

Bloodgood's Honey. See *American Amber*.

(To be continued.)

QUERIES AND ANSWERS.

HOT-WATER PIPES, IN BRICK TROUGHS, BELOW THE LEVEL OF THE GREENHOUSE FLOOR.

"My greenhouse (twenty feet by thirteen) is heated by four-inch pipes, running along the front, middle, and one end, laid in brick channels, one foot deep and ten inches wide. These channels are covered through their entire length by open iron gratings. The water seems to circulate well, and to heat the pipes thoroughly; but the heat, instead of rising, appears to be dormant in the flue. In addition to this house, the boiler also heats one other compartment (ten feet by thirteen), and supplies a small forcing-house with hot water for a bed laid over open tanks; but these two latter are each supplied with separate flow and return pipes. Can you suggest any mode of driving the heated air out of the brick chambers?"—INQUIRER.

[If your pipes had not been heated thoroughly, we might have supposed them to have been too deeply placed for your boiler. As, however, there is no want of heat in the pipes, your not getting it fast enough in the house is entirely owing to their position. You are mistaken in supposing the heat is confined below the grating, though it will be so for a time at first, owing to the heat radiated to the walls, and from them to the earth; and what is first radiated upwards will so far, for a short time, be radiated back again from the gratings to the pipes. As all these get heated, the warm air must rise. The same heat in open pipes would radiate, and tell upon the air of the house at once. You cannot heat the air of the house so quickly, but you will have a greater storehouse of heat left. A couple of openings, a foot square, in the chamber, at the end of the house, will help you. If you painted, or whitewashed, the walls of the chamber, that would minimise the absorption of heat by the bricks. The grating should be of a dark colour, to radiate heat as soon as absorbed.]

PRUNING ROSES WHEN PLANTED.

"I planted some half-standard Roses about a month ago, which I bought at Stevens' auction rooms; and, before planting them, I cut about six inches off the longest branches, as they appeared to have been out of the ground for a week. I have also done the same with a *Sempervirens* creeping Rose. A friend has done exactly the same as I have; and seeing your late advice about pruning, in THE COTTAGE GARDENER, we are disputing as to whether we have done right to cut them. I tell him I am afraid that, in taking his advice, I have just prevented them from blooming this summer. Will you kindly give us your valuable opinion?

"I have just planted a few Currant and Gooseberry bushes,

and I do not know whether to prune them now, or not. Our difficulty consists in not knowing whether such trees should be cut down a little (in this month for planting such trees), or whether the frost will kill them."—F. J. WILLIAMS.

[Your neighbour is wrong, and you are not right, in the cutting of your newly-planted Roses. All standard, and half-standard Roses, all bush Roses and Briars (stocks to work on), and all kinds of running and climbing Roses whatsoever, are, and ought to be, cut close in, when they are planted from a nursery, or sale-room. But old-established Roses, of all these sections, in one's own garden, may be moved without being close pruned, although close pruning does not hurt any Rose in the world, except very strong climbers. The next step leaves you in the dark, and we cannot see whether the *Sempervirens* was a newly-planted Rose: but the pruning depends on that. Many old *Sempervirens* would be ruined by being cut so low, and any young ones, which were newly bought and planted, would be half ruined for life, by being cut so high; as, ten to one, in both cases, that the shoots, which you left will only push two or three eyes at the top, and that their bottom part will get hide-bound and hard, and such wood is the worst of channels for the rising sap.

Currants and Gooseberries ought to be pruned and thinned when newly planted, or just before planting. Frost does them no harm.]

PERMANENT OBSERVATORY HIVE.

In an article, published some short time since, "THE DEVON-SHIRE BEE-KEEPER" requested an account of some new observatory hives, to which I had previously alluded. The pressure of numerous engagements must plead my excuse for not forwarding this article before, as it has been for some time in hand.

The greatest objection to observatory hives, as ordinarily constructed, is, that they must either be kept covered up, in which case the sudden stimulus of light on opening them deranges all the actions of the bees, and renders them merely amusing toys, instead of means of scientific observation; or if, on the contrary, the hives are permanently open, the escape of heat through the glass causes the death of the bees in winter.

My experiments have been made with a view of rendering an observatory hive permanent, by causing the sides, though transparent, to be non-conductors of heat. This has been accomplished by forming them of four plates of glass, with thin spaces between. The glass plates are cemented to the frames in an air-tight manner, so that change of air between the plates is prevented. Hence, the sides, though transferred, are very warm—being exceedingly bad conductors of heat. Many persons are aware of the greatly increased warmth of a room caused by double windows, such as are extensively used in Russia. Here the principle is carried out to its full extent, by the glass being hermetically sealed, and by there being, not merely one layer of non-conducting air, but two or three. Supposing, for the sake of illustration, that one-fourth of the heat of the hive would, in a given time, escape through the first layer of air,—the second would only allow one-fourth of that to escape, and the third one-fourth of the remainder; so that the loss would be almost inappreciable. I may mention, that these quadruple thicknesses of glass do not in the least obstruct the sight.

I have had some of my own bar and slide hives fitted up in this manner; but, of course, the plan is applicable to almost any hives.

The direct light of the sun must not be permitted to fall on glass hives, as the heat in the sun's rays, being accompanied by its light, has the peculiar property of passing through transparent substances. In fact, glass is (if I may use the word in this sense) transparent to the heat of the sun, although not to warmth from other sources. Hence, it follows, that a transparent hive, placed in the sun's rays, would become over-heated—even, possibly, to such an extent as to endanger the melting of the combs. I had some of these hives in operation in the windows of my own house for some time, and they have afforded me opportunities for observation such as have certainly never been before enjoyed; as, without the slightest disturbance, the bees are always open to inspection, and the influences of frost or warmth, dryness or dampness in the atmosphere, or any other change, is readily seen. One of these hives is situated in the window of my staircase, and rarely do I pass by without looking at the state of my favourites. In frost, I see them clustered together in a solid mass; on warmer days, spreading over the combs,

sometimes cleaning the hives, or carrying out the dead (burying them, as old Warden called it).

One particularly interesting circumstance I noticed in the autumn, which was, that when a wasp managed to escape the sentinels at the entrance, and gained admission into a partially-filled hive, he was secure from injury, and plunged fearlessly into the clustered mass of bees amongst the combs. From the hive being transparent the wasp did not readily know the way out again; and I have had repeatedly to draw back a slide, and introduce a honey-knife to kill the intruder, when his dead body was carried out by the workers.

My hive-maker is now busily engaged in making me a number of these hives, and I shall have much pleasure in supplying any person who may wish to test the principle; but it will be absolutely necessary that timely application be made, as they require to be very carefully constructed, and cannot be done in a hurry.—W. B. TEGETMEIER, *Muswell Hill, N.*

THE UTILITY OF COVERING VINE BORDERS.

ONE of your correspondents ("A. A.") asks, "What benefit is derived from covering Vine borders with hot dung?" Now, it is an ascertained fact, that roots must be in action before the branches; and if Vine borders in early forcing are but thinly covered, the roots cannot properly fulfil their functions. The border, perhaps, is frozen some inches deep; consequently, the roots cannot supply the demand of the leaves—in fact, they cannot act.

It is altogether unnatural to maintain a high temperature for the leaves, when the borders are unprotected. Leaves will expand, certainly; fruit will also swell, but that is partly attributable to the humid state of the atmosphere. Those leaves, by absorption, supply, in a great measure, the demands of the Vine; but growth, under such circumstances, is only an elongation, without strength; whereas, if Vine borders, which have become heated during the summer months, are covered early in October with some fermenting material, radiation is prevented, and heat, to a certain extent, generated. Thus, the roots are in a suitable temperature, and when that is the case new ones will be formed, when the other parts are dormant. Borders unprotected are liable to be at one period a frozen mass; at another, deluged with cold rain; and your correspondent "A. A." I apprehend, would not like to water the plants in his viney, in active growth, with water at the temperature of 32°. Still he advocates cold borders.

One great cause of mildew is, an unhealthy root action; and forcing early with unprotected borders is calculated to produce unhealthy action, by forcing the roots into the subsoil to supply the demand of the leaves. This is the cause of shanking and premature decay. "A. A." says, heat ascends, cold descends, and borders covered with hot dung prevents it.

I have four viney, 148 feet long by 18. My predecessor never protected his borders during his stay here; the consequence was, that he forced until he could not get any Grapes, and was discharged. I was engaged in January, and the early house had but a dozen bunches of Grapes in it; the second, eighteen bunches; the third, a sprinkling; and the fourth, a good crop that year. Here was the effect of some cause. The cause of failure in the early houses was the destruction of surface roots when leaves were developed. The cause of success in the late house was by allowing it to break naturally; thus leaves and roots were in action together. I removed the soil of the early borders to the depth of two feet, without finding a living root, and put on a surface-dressing of six inches; covered the whole with fermenting materials near three feet deep; removed it in May; surface-dressed in September; covered and thatched in October; and the year following I had a beautiful crop—some bunches weighing 2½ lbs. I should just as soon expect a comfortable night's rest with my feet wrapped in ice, as a crop of Grapes with unprotected borders.—YOUNG BLOOD.

EXPOSURE OF MANURE.

Is it from reason, or experience, that so many of our best agriculturists have such a fear of leaving their manure exposed after it has been spread on the field without ploughing in? I fancy reason has but little to do with it, and my own practice has been convincing to me, that the injury is imaginary. Are we wrong

when we copy nature? And is not manure dropped on the surface by animals? Some facetious opponent will say, "How about cats?" We will give you the advantage of the small exception, and say it proves the rule. We know the gardener finds great benefit from top-dressings, and if this were only because they retain the moisture, straw would do as well. I have often heard farmers remark, that the quickest return from the employment of manure was obtained by dressing grass land. Now, in this case, it cannot be covered up.

On mentioning this last fact to a friend, he said, "Ah! but I put my manure on the grass in autumn, and then there is little chance of its being dried by sun and wind till it is good for nothing." To which I replied, "That many prefer to dress grass just after the hay is got off, and contend it does most good then."

Now, I would ask, what does the farmer fear to lose? Is it ammonia? If the manure is fresh, there can be no danger; and if it is in a decaying state, how much free ammonia will be left after it has been filled into a cart, thrown out, and well spread on the field? But, if sun and wind are such enemies to manure, how is it that we pay such a large price for guano? Doing so surely must be a mistake. Here is a manure deposited by birds, drop by drop, on a barren rock, under the burning sun of Peru, becoming immediately as dry as dust, and remaining so for hundreds of years, and yet found worth a large sum per ton, and paying the debt of a nation.

Perhaps some person will be ready to say, "But what is the use of proving our fears groundless in this respect? Our practice of covering up our manure, if not always necessary, is decidedly so in the case of manuring for Turnips, in summer, when, the land being dry, it must be better to plough in the manure whilst in a moist state; and it never can be bad practice, for if manure takes no harm by exposure, it can never be benefited."

Though I think this last observation is open to inquiry, I would ask, is a manure heap never made on strong land farms, at a great waste of time, trouble, and manure, solely from the idea which we are trying to prove erroneous? How common is it to see manure taken out and heaped in a field, and remaining there for weeks and months, the black liquid running into the nearest ditch, because there is no time to plough it in, or the land is too hard and dry to be ploughed, when it might at once be spread on the land; or, what is quite as bad, placed about the field in small heaps of a few forkfuls, so that when rain comes the goodness of the manure is washed out where it lies, and the next corn crop rendered irregular; or it becomes dry, and takes twice the trouble to separate and spread regularly, that it would have done when first thrown out of the cart.

Upon light, sandy land, to rot manure in heaps appears a necessity; but I cannot think it is so on strong soils, and am unwilling to either make mine into heaps, or to leave it in the yards to be washed by every shower.—J. R. PEARSON, Chilwell.

APPLYING SULPHUR TO THE VINE MILDEW.

I FIND a great many of your correspondents are constantly inquiring for an effectual way of preventing the mildew on the Vine. The answers all agree on one point, that it must be sulphur—the flowers of sulphur—which must be used, to effect the destruction of this, hitherto considered, formidable enemy; but the application of it varies considerably, and methods of such applications are given, which must necessarily place the Vines in extreme peril. All methods which bring into existence the vapour of sulphur, enter into the category of the dangerous.

Now, I never profess more than I know; consequently, I must not talk of my experience, as regards Vines under glass. I belong to the plebeian class of open-wall growers; and of the effects of sulphur, and its application out of doors, I can speak authoritatively.

For six long years I had not a Grape fit to be eaten—oidium, or mildew, annually destroyed them. Fate led me to visit the horticultural neighbourhood of Paris, and there I found out the practice of the lowest and highest class of growers. I returned home, and did likewise, and was repaid by a magnificent crop of Grapes, perfectly free from mildew,—nay, many of my bunches are hanging on the Vines—under protection—on this, the 10th day of December, to attest to the truth of what I state.

Not the Grapes only, but the fine, healthy, vigorous canes which are to yield me a crop for next season, and which look as though they intended to do so, show at once to the eye how

they have luxuriated under my dry-sulphur treatment. They are clean, cinnamon-coloured canes, without a black spot upon them.

I have already spoken of this system in my notes on Montmorenci, some few months back; but, perhaps, I was not sufficiently explicit. It is simply this: the moment the buds burst, dust the Vines all over with flowers of sulphur, by means of one of the small French machines sold by Burgess and Key, of Newgate Street, who are the agents of the patentees.

When the Vines are in flower, repeat the operation, and a third time when the berries are set, and some four or five days after syringe thoroughly. Select a dry day for the dusting, but, of course, not a windy one. A good deal of the sulphur will fall to the ground; never mind, it is not wasted—it plays its part even there.

I will pledge my reputation, as an enthusiastic amateur, that after these three dry dustings, you will not find, on nine Vines out of ten, sufficient of the mildew powder to cover a pea.

Your aristocratic growers within doors, will say, "That is all very well for your out-of-door growers, but what are we to do?" Let them not be hasty. A friend of mine came to me with an awfully long face. He had a good 5 cwt. of Grapes in his houses covered with oidium, and his gardener had given them up. What was he to do? My reply was, go and spend half-a-crown for a sulphur duster, un nail your Vines, powder them well, syringe three days after, powder again in a week, and syringe again some four or five days after. He had confidence in my authoritative tone, set to work, did it all himself, saved his Grapes, and had a first-rate crop.—H. S. WATSON, Tollington Park.

BEES' AND WASPS' CELLS—BEES SECRETING WAX.

THOSE who take an interest in bees, may have noticed a little discussion lately, concerning their mode of forming cells; and that I objected to the theory of their being first made round, and then pressed into the hexagonal form. I did so, not only on the ground that there was nothing to press against, but also, and chiefly, from the fact that the embryo cells were triangular. I mentioned this in my last paper, and hinted that they might be made so by the aid of the ocelli in front of the heads of bees. I ventured the latter with some diffidence; but I may safely state, that when once bees have begun the triangular foundations, the cells assume the hexagonal form as the workers proceed. And what is rather remarkable is, that they increase their scale about one-third when making the cells of drones, and reduce it again when forming common cells in the same comb. I am at a loss, however, like all others who have studied this interesting subject, to explain exactly how this is done. But, as bees only use their mouths when building cells, perhaps their mandibles serve as compasses, by which they add about a third to the triangular embryos of common cells. I need hardly repeat, that those will form larger hexagons, until the workers reduce the foundations to the common standard.

If my views are correct, they may be also applied to the hornet and wasp, who make larger cells for drones and queens in the lower divisions of their combs. I may note, that each of these is formed in the same manner, as the first one, or foundation of the nest, made by the queen alone—that is, by fixing a prop, made of the scrapings of wood, mixed with a gummy substance, in the top of a cavity. Thus, the embryo of a colony of wasps is like a nail, with a triangular impression on its head,—being the nucleus of the hexagonal cells before the tiny, paper-like structure is covered, or takes the parachute form.

I may have mentioned in my last paper, that the ocelli was very visible in front of the hornet's head; and I may now state, that perhaps two impressions of it would form a hexagon. I am speaking from one before me under the microscope; but, as I have just said, that appendage can be seen without it. I should state, too, that it fits exactly into the angles of the cells. This is much in favour of what I have stated respecting the ocelli being the instrument with which the insects form their cells. It is rather a curious term, and is seldom used by writers on bees: it means, however, the upper part of the insect's mouth, or rather the angular part, on which their mandibles, or lips, close. These may be called nippers, for both bees and wasps have great power of cutting, or clipping with them,—especially the yellow brood,—even so much as to cut a hair in twain.

Since the above was written, I find that "A DEVONSHIRE

BEE-KEEPER," at page 135, is rather startled at what I previously stated, respecting bees collecting wax from plants. He asks, if I am "acquainted with Huber's experiments," in reference to bees secreting wax from honey. Yes; and I trust that the following extract from my little book on bees, under the head of wax, will suffice:—"The theory that wax is secreted from honey, in the stomach of the bee, has never been clearly established, nor did I ever hear of its being distilled in the substance of honey. The fact that bees are always laden when they quit the parent stock in a swarm, is not sufficient foundation for it, what they carry off at that time being merely a provision till they are settled, wax itself forming a portion of their load. I am aware that bees have been confined and fed on honey and sugar, especially the latter, and that they still secreted wax. However, it would be impossible, in such a case, to know how much material for wax the bees had collected before their imprisonment, while wax may form one of the constituents of sugar, though it does not of honey." These remarks were made some years back, with reference to Huber's experiments, which the writer adduces against my belief that bees collect wax from plants already named; and, from after experience, I see little or no reason to modify them. But I may remark, that the instance of a swarm being confined "for twenty-four hours immediately after it had issued, and found at the end of that time six combs already begun," &c., is hardly worth notice, for the same often happens when fresh swarms are even longer confined by bad weather. However, the writer hints, also, that I stand alone respecting bees collecting wax from plants. But such is not the case; for Mr. Taylor called my attention to it some years back, when I had a little discussion with him, in the *Norwich Mercury*, concerning the new and old system of keeping bees. At present, I cannot exactly state his words, but the following is the pith of them:—About the season for the construction of their combs, bees may be seen upon the young shoots and leaves of trees where wax is most plentiful; for instance, on those of the Laurel. It is apparent that they are not collecting honey, for they make no use of the proboscis, but merely scrape the surface of the shoots and underside of the leaves with their mandibles, as hornets and wasps do when collecting materials for their nests.

In connexion with this, I may state, that Reaumer erroneously thought that bees extracted wax from pollen; likewise, that Huber is again quoted against what I said of bees ejecting wax from their mouths. But, the truth of what I stated is easily ascertained, by observing them at work, without clustering, in a bell-glass.

The writer says, that volumes might be written on both sides of his proposition, for trying waxen plates as a substitute for artificial combs. True; but perhaps he had in view Huber's erroneous division of working-bees into two classes—workers and sculptors. However, be that as it may, Pliny speaks of one man who spent fifty years, and another his whole life, in trying to discover how bees made their combs, with but little success. Perhaps those old bee-keepers were not aware of the little ocelli, spoken of above.—J. WIGHTON.

VEGETABLE CULTURE AND COOKERY.

(Continued from Vol. XIX., page 204.)

CELERY WHITE SAUCE.—Take two nice white heads of Celery, of medium size, and one small Onion; shred them rather small, and then stew them in a pint of water, with a tea-spoonful of salt, till they are quite tender. Mix an ounce of butter with some flour, to which add a quarter of a pint of cream; add these to the stewed Celery and Onion, and boil the whole up together, stirring it all the time. Flavour with a squeeze of lemon.

A plainer sauce than either of the above, and quite good enough for ordinary use, is made by cutting a large head of Celery fine, and boiling it till soft in a pint of water. Thicken it with butter and flour, and season it with salt, pepper, and mace.

CELERY WITH CREAM.—Select the finest and whitest part of a head of Celery, and, after washing it perfectly clean, cut it into lengths of three inches. Boil it tender, and strain it. Then beat up the yolks of four eggs, and strain them into half a pint of cream, adding a little salt and nutmeg. Put the whole into a tossing-pan, and set it over the stove till it boils to a proper consistency, and then send it to table with toasted bread under it.

CELERY, ESSENCE OF.—This will be found very useful for flavouring soups, or broth, of any kind, and a few drops of it

will communicate the Celery flavour to a pint of soup. Bruise half an ounce of Celery-seed, and put it in a bottle; then pour over it a quarter of a pint of brandy; and, after standing a fortnight well corked, strain the spirit from the seeds, and bottle it, when it will be fit for use.

CELERY, TO FRY.—Boil a head of Celery till it is tender, and then divide it into two. Season it with pepper and salt, and fry it with butter, or dripping, in the frying-pan.

CELERY WITH GRAVY.—Take what quantity you please of heads of Celery, cut them into short pieces, parboil, and drain them. Then put into a stewpan some fat, and a spoonful of flour, which brown. Add to this, gently, a ladleful of broth, a bunch of Parsley, some salt and pepper, and let it stew a quarter of an hour. Then put in the Celery and some gravy, and let the whole stand till the sauce is reduced, when serve.

CELERY SOUP.—Let the sticks of Celery be well washed, and then cut into lengths of about two inches. Put them into clear gravy soup, and stew them in a soup-pan by the side of the fire for an hour, till tender. If any scum rises, take it off. Season with salt.

When Celery cannot be procured, a few drops of the essence, described above, may be used; or half a drachm of the seed, pounded fine, put in a quarter of an hour before the soup is done, and a little sugar, will give as much flavour to half a gallon of soup as seven ounces of Celery.—ROGER ASHPOLE.

(To be continued.)

HOW TO DRY CURRANTS.

(By MRS. W.)

It gives me joy by no means small,
My worthy friend, to see,
That I know anything at all,
That is not known to thee;
But still so generous is my heart,
Of selfishness devoid,
That did I not my stock impart,
It would not be enjoyed;
Keeping one's talents all unused,
I ever have decried,
Knowledge should always be diffused,
Not in a napkin tied.
With kindly feelings that o'erflow,
For you and all beside,
I sit me down to let you know
How Currants should be dried.
First take a brass or copper kettle,
No matter which, I ween,
Not very big, nor yet too little,
And wipe it dry and clean.
One glass* of water, and a pound
Of sugar you'll require.
Then in the kettle whisk them round,
And hang it o'er the fire.
Ay, hang it there to melt, not boil.
Don't let it boil, my dear,
For that would all your Currants spoil,
And cost you many a tear.
Then take six pounds of Currants fresh,
Pick off each worm and bougar,
And wash them in a calabash,
And pour them over the sugar.
Your precious time you may beguile,
With some instructive book,
If at the kettle you meanwhile,
Will cast a frequent look.
Or rather I would recommend,
Some volume light or quizzical,
Which would require less thoughts, my friend,
Than one more metaphysical;
For instance, if "Watts" on the Mind,
Should be the book selected,
What's on the fire, I think you'd find,
Would be almost neglected.
Well, when they've boiled up once, my dear,
O! take them off in haste;
For if you longer leave them there,
The juice will surely waste.
Then spread them out on pans of tin—
Broad pans, not very high;
For if you do not spread them thin,
They'll never, *never* dry!
Some set their pans before the fire,
Some on their garden beds,
And some go up a little higher,
And place them on their sheds.
The latter place is scarcely neat,
For bugs and flies can reach them,
And hens' and roosters' dirty feet,
Are very apt to scratch them.

* Wine-glass.

I like the course my mother takes,
She uses wondrous care,
The oven where her bread bakes,
She sweetly dries them there.

My mother knows what she's about,
Through many scenes she's been,
And when she hauls her bread pans out,
She pokes her currants in;
And she repeats this process thrice,
Which dries them just enough;
For know, they'd not be done at twice,
Four times would make them tough:
And every time she takes them out,
She's sure to turn them over.
When done, she puts them in a pot,
Beneath a cotton cover;
A pitcher with a broken snout,
Or old crack'd jar will do,
Because they never will get out,
They never can run through.

—(American Country Gentleman.)

CHEAP AND MOST EFFECTUAL RAT-TRAP.

My gardener is receiving letters from Ireland, Yorkshire, Lancashire, Kent, and Norfolk, all asking for his trap, and for further information as to directions for setting it. As you may have had similar queries addressed to you, I now send the following additional instructions, remarking first, however, that the drawing is so far incorrect, as it places the string (A) on the wrong side of the hooked peg (B); and that there ought to appear no slack string whatever, in the diagram, except the loose end just above the knotted part that (after going round the bridge-peg c), is connected with the noose wire (F).

Also, as the drawing now faces the reader, he would not imagine that the noose and tightened string (A) attached to the supposed bent twig, and which extends, presumably, in a curve of five feet, at an angle of 45° away from the noose,—so as to keep the line (A) tight,—are in the same line as they ought to appear to be.

I fancy your draughtsman could not have set the trap before he drew it, otherwise the action would have been self-apparent, for the prop-peg (D), is to counteract the pull of the stretched twine (A), which, but for such resistance to the downward direction of the bridge-peg (c), would, by the pull upwards, start c from the hook altogether.—H. AUSTEN, Lieutenant-Colonel.

TRADE LISTS.

A Spring Catalogue and Amateur's Guide, for 1859 (published by Messrs. Sutton, of Reading), not only contains lists of the plants most worthy of cultivation, but much information relative to their cultivation. We can recommend their New Giant Onion seed; for we know of a large crop, grown this year, many of them seventeen inches in circumference. We give similar praise to the General Price Current of Kitchen Garden, Flower and Farm Seeds, of the Plymouth Seed, Implement, and Manure Company. It gives lists, directions for culture, and a calendar of monthly operations.

TO CORRESPONDENTS.

DEFINITIONS (*Ignoramus*).—The term *linings* (more properly *coatings*) are masses of fermenting dung, placed round hotbeds to increase their warmth. *Liquid manure* is guano, sheep's dung, or other solid manure dissolved in water. The drainage from a stable, or house sewage, are liquid manures. A *pit* is a structure of bricks or turf, to be covered with glazed frames. If not heated, it is a *cold pit*. If you purchase the *Cottage Gardeners' Dictionary*, you will there find these and other gardening terms explained.

FERN LEAVES (*A Young Subscriber*).—You might obtain them of Mr. Brocas, naturalist, 85, St. Martin's Lane, W.C.

VINE CUTTINGS AND EYES (*M. F.*).—You should have told us of your circumstances and advantages. Keep the young wood in soil neither wet nor dry, until you wish to plant them. If you only want a plant of each, and have no artificial heat, cut each shoot across at the lowest bud, pick out the other buds, except the two uppermost, and plant the cuttings at once, where you wish them to remain, just as you would do with a Currant cutting. When the weather gets warm, the buds will break, and roots will be formed. If you grow early Cucumbers, or have any such means of heat, cut your wood, so as to have about three quarters of an inch on each side of the bud; and put these separately in a small pot of fibry, sandy loam, well drained, and the soil made firm about the bud, and covered about a quarter of an inch. Pot into a size larger when the pot is full of roots. If convenient, keep under glass until the autumn, and plant out the following spring, or plant out after hardening-off gradually, about the end of June; and shade a little at first, till the plants get used to

the change. Vines will stand any heat, when growing, not above 65° at night, and 85° during the day. The Parsley-leaved is grown chiefly for the foliage.

MILDEW ON CINERARIAS—VINES FOR POT CULTURE (*S. F.*).—Sulphur is the best remedy for mildew. You have been keeping the place too close and damp. Give plenty of air, and do not let the plants suffer for want of water. The *West's St. Peter's* will suit your house. For pot culture, we prefer the *Black Hamburg* and *White Muscadine*. If you have conveniences, the sooner you place your eyes in a sweet bottom heat, after January, the more forward will your plants be.

BOOKS ON GARDENING—ORANGE TREE SHEDDING ITS LEAVES (*M. O'C.*).—Both the books you name are good. For a beginner, Macintosh's is most explicit. "The Gardener's Assistant," by Thompson, is also good, so far as we have seen of it, and would be the cheapest. We suspect your Orange trees have got into a sour, sodden state at the roots, in unison with a low temperature. Let them alone until February, then see that drainage is all right. Pick away some of the old soil, and replace with fibry, sandy loam, and increase the temperature with a moist atmosphere. Next autumn beware of over watering.

TREES FOR A VINYARD AND ORCHARD-HOUSE (*R. S.*).—Your *Black Hamburg*, *Golden Hamburg*, *Frontignac*, and *Black Prince* Vines, will force very well. *Muscats* would also do well in the warmest end. *Muscats* will not please you in the second house, if—although you let them start without much artificial heat—you do not give them artificial heat when in bloom, and swelling and ripening. Peaches and Nectarines are, perhaps, the easiest managed in orchard-houses; but the kinds must depend on the wishes of the grower, as *Apricots*, *Cherries*, *Apples*, *Pears*, and *Vines*, may all be so cultivated in pots. After deducting paths, you would require to give from four to six square feet to each plant, to enable you to do the plants justice. They will stand thicker when young; but you could place temporary plants in the spaces, instead of having so many stationary plants. *Raspberries*, *Currants*, and *Gooseberries* might be used for that purpose. Lists of such plants have been frequently given.

HOT-WATER TROUGH (*G. Cask*).—In the first place, your trough must not be lower than the top of your boiler. In the second place, under the circumstances, your trough must be water-tight all over, if that is to be a heating medium. What is the use of your trough, if it will not hold water? We presume you have a flow and return pipe for top heat; if so, have a flow and return pipe for bottom heat, and there will be no danger of overflowing. If a flow pipe for top heat would suit your purpose, bring the return pipe through your trough. You cannot connect the top flow pipe with an open trough below its level. You can have a close pipe, or a series of pipes, if not below the boiler.

HARDY VINES (*Emily*).—The names you ask for will be of no use to you. The Vines were sent by Mr. Rivers for experiments, to see which of the two kinds was the right *Esperione*, and to ascertain the value and quality of newly-introduced kinds,—such as *Muscat Otonell*, *Early Malingre* (said to be the earliest Grape out of doors), and *Muscat St. Laurent*. Get the two *Esperiones*. Both are good for out-doors.

STEPHANOTIS FLORIBUNDA (*W. D.*).—*Stephanotis* has seeded often; but your plant is not *Stephanotis floribunda*, the seed-pod of which is quite a different thing from what you describe as "like a goose's egg;" and, surely, it would not seed, or even bloom, at four feet high. At twenty-four feet, or forty feet, it would not be a wonder to see it hanging with long narrow-pointed seed-pods.

VARIEGATED PLANTS—EUCHARIS AMAZONICUM (*A Subscriber*).—We are preparing a full and particular account of the more showy variegated plants; as, unless a list is a full and fair account of the plants, it is worse than useless to those who do not know the plants, and those who do need no list. The *Eucharis Amazonicum* is a most delightful stove bulb, which holds on all the year round, or is an evergreen. It will not do in a greenhouse from September to May; but in the summer months it will do very well in a greenhouse, if the paths and walls are moistened daily with a syringe. The kind of soil for it, is, just the very thing they use for the large prize Geraniums at the shows—that is, the best turfy loam, reduced by twelve months' exposure to the air, and by turning over now and then, with a little very rotten dung, and a little sand. But your plant is not quite old enough yet for the dung, so use one-sixth part of peat instead.

SCALE ON HEATHS—TURNING OUT CHRYSANTHEMUMS—PRUNING ROSES (*Arthur Connell*).—The very best receipt for killing the scale on Heaths is to burn the plants, for other receipts rarely cure a Heath of that pest. First of all, see that the balls of the Chrysanthemum are moistened through and through, then turn them out of the pots in any sheltered place, and plant them one inch deeper than they stood in the pots. If a very hard frost comes, cover them with straw. You must not use the same plants again. Divide them at the end of April, and make each into five or six pieces, or plants. Also, take cuttings for smaller plants. Do not prune your yellow and hybrid perpetual Roses until February.

SHRUBS FOR A TOWN GARDEN (*J. W.*).—Tree Box and *Aucuba Japonica* are the two best shrubs for standing the smoke of towns; Yew and Holly the next best, and they can be grown as shrubs; Privet and *Cotoneaster microphylla* next; then the common *Syringa (Philadelphus coronarius)*, and Guelder Rose, and the Persian and common Lilacs. The badness, the dryness, and the want of deep working of the soil, are the main causes against a great variety of trees and shrubs doing in towns.

HYACINTHS (*A Country Subscriber*).—Not one of the works you quote is any authority. It is our opinion that Hyacinths and other florists' bulbs might be raised in some parts of England quite as successfully as in Holland; but no one has tried the experiment, much less have they told us how to proceed. We wish they would. The calendar you suggest we had arranged to have published as soon as that we are now publishing is completed, which will be in March.

COOKING CARDOONS (*J. F.*).—Take the lower ends of the stalks, such as are firm and solid, cut them into pieces six inches long, tie them in bundles, and boil them until tender. Have ready a piece of butter in a frying-pan, in which flour and fry them. They may then be served like Asparagus, on a toast, with a white sauce over them. In our No. 418, you will find other modes of cooking Cardoons, and that number will cost you threepence.

SEEDSMEN (*A Constant Subscriber*).—We cannot recommend any one; but write to any of the first-rate seedsmen who advertise in our columns.

HIMALAYAN SEEDS (*J. W.*).—Preston).—They ought to be sown immediately, and in gentle heat. Many of the plants, such as *Abies Smithiana*, will be hardy. We do not recognise any of the native names. Harden off the seedlings.

TRANSPLANTING A LARGE THORN (*Pinctum*).—We would not venture to risk the removal of so valuable a tree without its being previously well prepared for the change. Cut the roots all round within three feet of the stem, now, or in February, and thin the head considerably, if it was not regularly pruned in former years, and at the end of next October it will remove as safely as a common Plum tree.

NAMES OF FRUITS (*J. M. D.*).—Your Pear is *Passe Colmar*, and the Apple *Braddick's Nonpareil*. (*J. M. D.*)—3. *Passe Colmar*. 4. *Bur-germeester*. 6. *Beurré Goubaud*. 7. *Rotten*. 9. *Duchesse d'Angoulême*. 10. *Flemish Beauty* (rotten). We cannot judge of the Grape, from the specimen sent being so small, but it is a very fine one. Can you tell us anything about it. (*G. W.*)—1. *Heurré Rance*. 2. *Doyenne blanc*. 3. *Van Mons* (*Lion le Clerc*). 7. *Beurré Rance*. 8. *Glout Moreau*. 9. *Black Worcester*. 10. *Délices de Hardenpont*. 11. *Winter Nelis*. 13. *Catillac*. 14. *Uvedale's St. Germain*. The others unknown. The Conifers are—1. *Pinus Austriaca*. 2. *P. Montezumæ*. 3. *P. Cephalonica*.

NAMES OF PLANTS (*J. Stafford*).—Your plants are as follows:—1. *Ipomoea Horsfalliae*, Mrs. Horsfall's *Ipomœa*. 2. *Pleroma heteromalla*, or *Melastoma heteromalla* of the "Botanical Magazine." One-woolly-sided-leaved *Pleroma*. 3. *Eranthemum pulchellum*, the nervose *Eranthemum*. (*W. H. M.*)—Your Ferns are as follows:—No. 1 is the sterile frond of the *Pteris crenata*; *Pteris Chinensis* of some authors. No. 2 is too imperfect to be certain about, but we believe it to be *Asplenium acutum* (?). No. 3. *Hypolepis repens*. A large-growing, handsome Fern. The plants, from which the leaves sent were taken, have been woefully punished by the red spider. A free use of the syringe will soon put all right, at this cool season of the year.

bourhood had discontinued keeping them, as their local popularity was gone, as fowls for the table."

In *Golden-spangled Hamburgs* there were but few pens; but some few individual birds were highly praiseworthy.

The *Black Polands* were a most respectable collection, but neither the *Silver* nor *Golden* were good. It is really a matter of regret, to find that this falling off in one of our most beautiful varieties of fancy fowls is becoming almost universal at our present Meetings, more particularly when it is considered, that such fowls, a few years back, formed one of the most interesting and attractive features to the public generally.

There were good *Black*, and also *Game Bantams* exhibited.

In the "any other distinct breed class," *Black Hamburgs* carried the day in both old and young. They were excellent birds, and are a really useful variety.

In *Geese*, the prize birds were of immense size—"cross-bred." Some exceedingly superior Spanish Geese were likewise exhibited.

The whole Exhibition was carried out in a most careful and orderly manner, and the general management of the poultry could not be excelled.

Mr. Edward Hewitt, of Eden Cottage, Spark Brook, near Birmingham, officiated as Judge on the occasion.

We published the prize list last week.

CONTINUANCE OF THE MALE BIRD'S INFLUENCE.

LOOKING over some of the back numbers of THE COTTAGE GARDENER, I saw, in the number of November 2nd, which I had before overlooked, an answer to "AMATEUR," respecting the influence of the male bird; likewise, the answer of "SALOP," in the number of November 23rd. My experience is, that it lasts very much longer even than stated by "SALOP." In 1855, I had a Black Cochin-China hen, that had reared a hatch of Buff Cochin chickens, and when she left them she began to moult. I then put her by herself, on purpose to match her with a Black cock. She ran by herself till recovered from moulting, and that was in November of the same year. By accident, a young Dorking cock got with her, and remained with her two days. From former observations, I knew my project was spoiled; so I did not match her, but sold all my poultry off, with the exception of this said hen, and she did not begin to lay again till May, 1856. She layed all May, and till the last week in June; then she wanted to sit. I sent for a sitting of White-crested Black Polands eggs, which were thirteen. I put those under her, as well as the four last eggs she laid, and the result was a chicken in every egg, true to time and true to breed—that is, half Dorking and half Cochin. I had no cock on my premises, neither was there one in the neighbourhood where I lived; and no one had anything to do with her, but myself and wife, and we were both as particular about it, from beginning to end, as if it had been to gain a fortune. I was heartily laughed at by my acquaintances, for thinking I should have chicks from these four eggs; but so confident was I of the result, that I would have wagered either of them £10. I will say more on this subject if you wish, or think it worth notice.—WORCESTER.

[We shall be much obliged by further particulars, and by the private communication of your name.—EDS.]

HALIFAX FANCY PIGEON ASSOCIATION.

ON December 17th was opened, for the first time in Halifax, a show of fancy Pigeons. The Exhibition, which continued throughout the day, was held in the large room of the Mechanics' Hall. On entering the room, the visitor was forcibly struck with the general arrangement, there being seven tables placed longitudinally, and covered with neat wire pens, resembling cases, in which were confined not fewer than 401 Pigeons of various breeds, plumage, and characteristics. The pens were not placed in tiers, one above another, but in single rows, thereby greatly facilitating the inspection of visitors, so that all might gratify their curiosity without having to stretch themselves for the purpose. Undoubtedly, in the matter of Pigeons, Halifax comes out A1, not only as regards the numbers shown, but the quality of the birds. The visitors were evidently taken by surprise, no one imagining that Halifax would take the shine out of the great Exhibition at the Crystal Palace in January last; but that such was the case is demonstrated by the fact, that the total number of fancy Pigeons shown on that occasion was but 385; and with regard to the

THE POULTRY CHRONICLE.

POULTRY SHOWS.

DECEMBER 29th and 30th. BURNLEY AND EAST LANCASHIRE. Sec., Angus Sutherland. Entries close December 10th.

JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton. Entries close December 11th.

JANUARY 18th, 19th, and 20th. CHESTERFIELD AND SCARSDALE. Secs., W. M. Hewitt, and J. Charlesworth. Entries close January 4th.

JANUARY 20th and 21st, 1859. LIVERPOOL.

JANUARY 28th and 29th. BOLTON POULTRY, PIGEON AND CANARY SHOW. Secs., Wm. Chester and Robert Greenhalgh, Bolton. Entries close January 15th.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs., R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Pitman, Esq.

N.B.—Secretaries will oblige us by sending early copies of their lists.

TREDEGAR POULTRY EXHIBITION.

This Exhibition is annually held at Newport, Monmouthshire, in conjunction with an agricultural society, which was instituted, and is supported, by the generosity of Sir Charles Morgan, Bart.; and common justice enforces the remark, that no public exhibition could be more satisfactorily conducted, than the one of which we are now speaking. The cattle market, at Newport, possesses peculiar advantages for holding a poultry show, being surrounded on three sides with extensive and excellent shedding. Beneath this, the fowls were arranged, and visitors had thus ample room afforded them for closely inspecting every pen.

In the classes for *Grey Dorkings*, both old birds and chickens, the first prizes were secured by fowls, the property of Captain Townley Parker; and, although for many years we have had the opportunity of seeing various prize pens belonging to this gentleman, we cannot call to recollection an instance where the true characteristics of this breed were better developed, or a more perfect match for colour selected. Mr. William David, of St. Nicholas, Glamorganshire, showed some excellent "speckled" fowls of this variety.

The *Spanish* class contained many superior birds; but cocks with falling combs being inadmissible, left the actual competition somewhat limited.

The *Game* fowls were exceedingly good.

In the *Hamburg* classes, faulty combs were evidently overlooked by owners in their selections. Perfection in this particular is all-important.

The *Aylesbury Ducks* were a show in themselves: all were praiseworthy. The *Rouen* and *Muscovy Ducks* were also well represented.

In *Turkeys*, the *Black Norfolk* variety easily took first honours.

A most extraordinary feature of this Exhibition was, that, although prizes were offered for both old and young *Cochins*, or *Brahma Pootras*, not one entry was made in either class; and, on inquiry, we found, "that many amateurs in this neigh-

display at the last Birmingham exhibition, it numbered only 220. A finer exhibition of this beautiful bird than that at Halifax could scarcely be expected.

The Halifax Fancy Pigeon Association, which was "open to all England," was formed in March last, and we may congratulate the Association on this its first Exhibition, which reflects great credit upon it and the town.

It will be observed, from the subjoined list of prizes, that the Halifax competitors came off very creditably. Mrs. W. Smith, of Kent House, had a close run for the silver cup for the best three pens of *Carriers*, *Powters*, and *Almond Tumblers*, which was won by a Birmingham competitor. In other classes, W. Smith, Esq., of Kent House, Halifax, President of the Association, gained several prizes, as also did Mr. John Firth, Lily Lane, Halifax, several other Halifax competitors being highly commended. The number of competitors was seventy-three, of whom about twenty reside in Halifax and neighbourhood. To show the interest taken in the Exhibition, we may observe, that some of the competitors sent Pigeons from Dundee, London, Manchester, Birmingham, Sunderland, Liverpool, Surrey, Lincolnshire, Sheffield, &c.

The Judges appointed were—Harrison Weir, Esq., Peckham, Surrey; Dean Wolstenholme, Esq., Gray's Inn Road, London; and Thomas James Cottle, Esq., Cheltenham. The following is the prize list:—

SILVER CUP, value £5 5s., presented by J. H. Charnock, Esq., Halifax, for the best three pens of Pigeons, of the following varieties:—*Carriers*, *Powters*, and *Almond Tumblers*, G. C. Adkins, near Birmingham. Highly Commended, Mrs. W. Smith, Kent House, Halifax; E. A. Lingard, near Birmingham.

CARRIERS.—*Black Cocks*.—First, G. Morgan, Manchester. Second, A. Wrigley, Nottingham. Commended, G. Morgan, Manchester; G. C. Adkins, Birmingham. *Black Hens*.—First and Second, G. Morgan. Highly Commended, J. Percival, Birmingham; E. Middleton, Oldham; G. C. Adkins. Commended, A. Wrigley. *Dun Cocks*.—First, G. Morgan, Second, T. Coley, Sheffield. Highly Commended, H. Prince, Nantwich; A. Wrigley. *Dun Hens*.—First and Second, T. Coley. Highly Commended, J. Percival; E. A. Lingard. Commended, J. Bairstow, Skircoat. *Blue Cocks*.—First, J. Firth, Lily Lane, Halifax. Second, T. Coley. Highly Commended, T. Coley. *Blue Hens*.—First and Second, T. Coley. Commended, J. Percival, Walworth. *White Cocks*.—First, S. Summerhayes, Taunton. Second, J. Firth. Highly Commended, J. Bairstow. *White Hens*.—First and Second, S. Summerhayes.

POWTERS.—*Yellow Cocks*.—First, Messrs. Bird and Beldon, Eccleshill Moor, Bradford. Second, W. Smith. Commended, Master J. Holdsworth, Halifax. *Yellow Hens*.—First, W. Smith. Second, E. A. Lingard. Highly Commended, M. Greenwood, Burnley. *Red Cocks*.—First, W. Smith. Second, W. B. Akers, Halifax. Highly Commended, W. Smith. Commended, J. Firth. *Red Hens*.—First, J. Firth. Second, J. M. Eaton, London. Highly Commended, W. B. Akers. *Blue Cocks*.—First and Second, W. Smith. Highly Commended, W. B. Akers. *Blue Hens*.—First, H. Simpson, York. Second, E. A. Lingard. Commended, W. Smith. *Black Cocks*.—First, E. A. Lingard. Second, J. Firth. Highly Commended, G. C. Adkins; W. Smith. *Black Hens*.—First, G. Ure, Dundee. Second, W. Smith. Commended, E. A. Lingard; W. Smith; J. Swift, Sportsman Inn, Halifax. *White Cocks*.—First, G. Ure. Second, W. Smith. Commended, J. Smith, London.

SHORT-FACED TUMBLERS.—First and Second, G. Morgan. Highly Commended, E. Fielding, Rochdale. Commended, E. A. Lingard; J. M. Eaton, London; G. Morgan. **Kites.**—First, E. Fielding. Second, G. Morgan. Commended, J. Percival. **Mottles.**—First, E. A. Lingard. Second, F. Esquillant, London. Highly Commended, J. M. Eaton; A. Wrigley. **Balds and Beards.**—First, E. A. Lingard. Second, F. Esquillant. Highly Commended, E. A. Lingard. Commended, J. Smith. **Self Colours.**—First, W. Smith. Second, Messrs. Bird and Beldon. Commended, J. Percival.

COMMON TUMBLERS.—**Mottles.**—First, G. Morgan. Second, J. Choyce, jun., Atherton. Commended, G. Morgan. **Balds and Beards.**—First, E. A. Lingard. Second, E. T. Archer, Surrey. Highly Commended, L. J. Crossley, Manor Heath, Halifax. Commended, E. T. Archer; G. C. Adkins; J. W. Edge, Birmingham. **Self Colours.**—First, J. Mills, Ovenden. Second, R. Davison, Gateshead. Highly Commended, T. Roper, Halifax.

JACOBINS.—First, G. C. Adkins. Second, J. Percival. Highly Commended, J. T. Lawrence, Liverpool. Commended, W. Taylor, Sheffield; F. Esquillant.

OWLS.—First, G. Morgan. Second, G. C. Adkins. Highly Commended, G. C. Adkins; E. Fielding.

NUNS.—First, Mrs. Parkinson, Sleaford. Second, G. C. Adkins. Commended, G. C. Adkins.

TURBITS.—First, G. Goore, Liverpool. Second, Mrs. Parkinson. Commended, M. Greenwood; J. Morrell, Sunderland.

FANTAILS.—First, G. Goore. Second, G. C. Adkins. Commended, J. T. Lawrence; G. Ure; H. Simpson.

TRUMPETERS.—First, I. Monkhouse, Kendal. Second, H. Simpson. Highly Commended, I. Monkhouse. Commended, Messrs. Layland and Sons, Warrington.

BARBS.—First, J. T. Lawrence. Second, W. Smith. Highly Commended, S. C. Baker, Chelsea; P. H. Jones, London. Commended, C. S. Baker; H. Simpson.

ARCHANGELS.—First, G. C. Adkins. Second, E. A. Lingard.

RUNTS.—First, E. A. Lingard. Second, P. H. Jones. Highly Commended, M. Greenwood. Commended, Mrs. Parkinson.

DRAGONS.—First, S. Summerhayes. Second, E. Middleton. Highly Commended, S. Summerhayes; G. C. Adkins; E. A. Lingard.

ANTWERPS.—First, P. H. Jones. Second, E. Fielding. Commended, J. Firth.

COMMON PIGEONS.—First, J. Swift. Second, S. Ambler, Ovenden. Commended, E. Ingham, Dunkirk, Halifax; J. Bairstow.

ANY NEW OR DISTINCT VARIETY.—First, G. W. Boothby, Louth. Second, S. Summerhayes. Third, W. Smith. Fourth, G. C. Adkins. —(*Halifax Guardian*.)

THE TURNED CROWN IN PIGEONS.

IN THE COTTAGE GARDENER of December 14th, in your notice of the Pigeons at Birmingham, I notice the following:—"Fantails are an exceedingly good class. Pen 1,419, which is commended by the Judges, appears to have lost the prize from one of the birds having a turned head" (which I take to mean the feathers turned up at the back of the head); "and great diversity of opinion seems to prevail as to whether turned heads are admissible or otherwise: some persons are of opinion they form a point of merit, while other fanciers consider it a disqualification. It would, therefore, be advisable, that some competent authority should settle the matter by laying down a definitive rule."

In reply to the above suggestion, I should consider the turned crown on a Fantail more as a sign of impurity, than as a merit. Fantails are generally smooth headed; and, I believe, as a rule, all the best English and French Fantails are plain headed. In Germany, many Fantails—perhaps the majority—have turned crowns; but they have likewise thicker beaks and shorter necks, which are also blemishes, and I have no doubt but the turned crown of the German Fantail is derived from some cross. They seem to care less about the purity of the breed, than the addition of some new feature. Thus, they breed the Carrier and Powter with turned crowns. I have met with Tumblers with turned crowns, and, I believe, Birmingham has also produced turned crowns on Tumblers by crossing. There is no accounting for tastes: as I said before, the Germans, who care little for the purity of race, have long tried to produce, by crossing, a Fantail with the eye of the Barb and frill of the Turbit.

Among the fancy Pigeons, the turned crown belongs to the Jacobin and the Trumpeter, and I consider it an advantage on a Laugher or Frillback; but on a Carrier, a Tumbler, a Powter, a Fantail, a Barb, a Turbit, or an Owl, I regard it as a bar sinister on their escutcheon.

In Toys, whose only property is feather, it may be regarded as a merit whenever it appears.

Doubtless, many fanciers may differ from me, especially as the Barb and Turbit are so frequently turned-crowned, and have been so for a long time. Nevertheless, they were, undoubtedly, originally smooth-headed breeds; and the turned crown, no matter how long it has been introduced, is a departure from the true type of the variety. I believe it is mainly owing to the introduction of the turned crown on the Turbit, that its characteristic raised orbits, or occipital ridges, like the frog's head, is now so rarely seen.

Again, it is said, that, in Trumpeters, white birds have no chance against splashed ones. This is decidedly wrong (unless by splashed mottles are meant?), for wherever colour, or marking, is made a point, it must be defined. A splashed bird is an irregular mixture to which a pure white is far preferable; but a mottle is a definite colour—the ten flight feathers in each wing, and the twelve quill feathers in the tail, must be black, or coloured, and the body also dark, mottled with white. Some fanciers go so far as to say, that there must only be white on the head, neck, chest, and shoulders, and any white below the wings they account as a blemish. I wish the leading shows would rearrange their lists of Pigeons, and not put such Toys as Nuns, Archangels, and Magpies, before Turbits, Barbs, Runts, Laced, and Frillbacks. Toys of only one property are not fit company for fancy birds of many points. They are all very well and very pretty in their place. But I have so recently sent you my ideas on the classification of Pigeons, that I will not trouble you further on this subject.—B. P. BRENT.

OUR LETTER BOX.

CREWE POULTRY SHOW.—Mr. W. Chatting and Mr. Price informs us that they cannot obtain the prizes awarded at this Show, nor yet any answer from the Secretary. These are the third and fourth complaints. Let those who are thus treated subscribe together, and sue the Secretary upon one case in the County Court. Succeeding in that, they will have no trouble about the others.

DISEASED SPANISH FOWLS (J. S. W.).—The ulcerated lungs are incurable. Spanish fowls are more susceptible of injury from cold than any other breed. Are you in a cold situation; or on a wet, ill-drained soil? These induce diseased lungs. The complaint is not infectious. We keep Fantail Pigeons for their beauty, and Runts for the table. A work such as you need we shall publish in a month or two.

WEEKLY CALENDAR.

Day of M'nth	Day of Week	JANUARY 4-10, 1859.	WEATHER NEAR LONDON IN 1858.				Sun Rises.	Sun Sets.	Moon R.ands.	Moon's Age.	Clock afterSun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
4	T	Oxalis marginata.	30.453-30.351	38-24	E.	—	8 af 8	2 af 4	sets.	⑤	5 8	4
5	W	Oxalis sanguinea.	30.335-30.176	31-22	N.E.	—	8 8	3 4	8 af 5	1	5 35	5
6	Tu	EPIPHANY. Twelfth Day.	30.170-30.142	30-16	S.E.	—	8 8	5 4	21 6	2	6 2	6
7	F	Oxalis variabilis.	30.217-30.096	39-25	S.	.02	7 8	6 4	34 7	3	6 28	7
8	S	Pittosporum tobira.	30.106-30.086	52-46	S.W.	.02	7 8	7 4	46 8	4	6 54	8
9	SUN	1 SUNDAY AFTER EPIPHANY.	30.199-30.074	52-26	S.W.	.04	6 8	8 4	58 9	5	7 19	9
10	M	Rhododendron arboreum.	30.224-30.104	52-40	S.W.	.08	6 8	10 4	12 11	6	7 44	10

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 41.3° and 30.9°, respectively. The greatest heat, 54°, occurred on the 7th, in 1845; and the lowest cold, 7°, on the 6th, in 1841. During the period 109 days were fine, and on 87 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

It is hoped that, in accordance with our previous instructions to that effect, the operations of wheeling on manure, and trenching up vacant quarters, in this department, have been regularly followed up in favourable weather. Advantage should be taken of dry, frosty mornings, to fork over heavy ground that has been previously trenched, as the more it is stirred about and exposed to the pulverising influence of frosts and thaws, the more mellow and workable it will become.

ASPARAGUS.—If the soil in the forced productive bed should become dry, give it a liberal supply of water, so that it may reach the roots; as slight waterings give an appearance of moisture at the top, while the roots are excessively dry, and unproductiveness is the consequence.

CABBAGES.—In favourable weather, fill up blanks, clear them of dead leaves, and hoe between them.

CARROTS.—Sow *Early Horn*, in heat, if young ones are wanted early; or in drills, on a warm border, slightly covered with sandy soil, and protected in severe weather.

CAULIFLOWERS.—Keep the surface stirred amongst the plants, in pits, frames, or under handlights. Dust them occasionally with lime, and trap slugs, by placing some pieces of Carrot, split lengthways, amongst them. The plants should be looked over on fine mornings, and the slugs destroyed.

PEAS and BEANS.—Sow, if the weather is favourable, on a warm border; and if a few are sown in boxes, pans, or pots, and placed in a greenhouse, pit, or frame, and transplanted to the open ground when they are an inch high, they may be useful as an early crop when the outdoor sowings have been either damaged or destroyed by the severity of the winter, or by vermin. Narrow sods of turf, laid in rows, and the seed sown in drills along the centre of each row, is recommended, where turf is easily procured, as the whole can be transferred, when fit, to the open ground, without disturbing or damaging the roots. The old-fashioned figure 4 traps, when kept constantly set, are most useful for the destruction of mice.

RADISHES.—Sow *Early Short-top*, in small drills, on a warm border. The seed should be covered with very light sandy soil, and be protected with mats, straw, fern, or any other such material that is conveniently at hand, until they begin to vegetate, when the covering should be taken off in the day and returned at night. When they have vegetated, netting, or strands of worsted thread, or small twine, stretched along and across the rows, will protect them from small birds. Small shreds of cloth, or linen of various colours, tied on twine, and stretched over seed-beds to flutter in the wind, will scare, for a time, even the London sparrows—the boldest of birds.

SEA-KALE.—As that which was covered first is cut, remove the pots, or boxes, to that portion which has hitherto had no covering, so as to keep up a succession. The dung and leaves which have been previously used will serve the purpose again, if a little fresh be added.

FRUIT GARDEN.

APPLES and PEARS (on Espaliers).—Prune, and fork up the ground near the stems, in frosty weather, to destroy the eggs, or larvæ, of grubs. In the orchard, open out the centre of each tree, and thin-out cross and crowded branches; scrape off moss and lichen from the stems and branches; and dress both the espalier and orchard, or standard, trees with a mixture of quicklime, soot, and clay, to the consistency of thick paint. If done well, it is a most effectual method for the destruction of moss and lichen.

FRUIT TREES may be removed and planted; but take care, by mulching, to keep the frost from the roots of newly-planted trees.

FLOWER GARDEN.

Although the present mild weather may appear to cheat us into a forgetfulness of winter, it is advisable to be prepared for the occurrence of severe weather. Borders, not cleaned and dressed, or beds not deeply dug, should at once be finished.

AURICULAS.—Give them plenty of air at all favourable opportunities, and only as much water as will keep the leaves from flagging.

CARNATIONS and PICOTEES.—Abundance of air to be given to these plants in frames, as a confined atmosphere will engender mildew. When they require water, it should be given in the morning of a fine day, when there is no danger from frost.

DAHLIAS.—Examine the roots, in order to counteract the effects of damp; and where a quantity of young plants are required for beds, or borders, it will be necessary to put the roots to work, by exciting them into growth in a gentle heat.

PANSIES, which, during the late mild weather, have begun to grow, and, therefore, will be more susceptible of injury, will require protection from severe weather.

PINKS.—A top-dressing of rotten dung between the plants, in beds, will be of service, both to enrich the soil and to protect them from frost.

PITS and FRAMES.—Look over the plants frequently, and remove dead leaves; destroy insects by fumigations of tobacco, and keep the plants as dry as possible, without flagging, with a free circulation of air in favourable weather.

ROSES.—Plant as long as the weather keeps mild, and protect the roots from frost by a mulching, or thick covering, of rotten dung, which also assists their growth with its nutriment, that is gradually carried down to their roots by frequent rains.

WILLIAM KEANE.

PORTABLE HOTHOUSES.—COSTUME FLOWERS.

THE young gardener and the thrifty amateur should read every word that has been written in these pages, on the subject of portable hothouses, three times over, and make themselves masters of every new move and measurement, from the first broaching of the subject till we hear the last of it. There is nothing in the gardening world

which is so little understood as that subject, by those who get into the country from the hives of industry, and do as others do, and did before them, or rather try to do so, but often spend a mint of money before they can get things into working order. Our Surbiton subscribers will now see another excellent way of laying down portable houses, from their own builder and architect. But Mr. Fish is too good-natured by half, and wants first an understanding with the landlord, for leave to remove his fancies at the end of the lease; which would be the best way certainly, if landlords were all but half so good-natured as he is. But I have heard some things about landlords, since this question was mooted, which made my hair stand on end, and which so roused the Rob Roy within me, that I shall not leave a stone unturned in favour of plant-houses being as portable as feather beds. But I must see the new house which Mr. Eyles, of the Crystal Palace, spoke about, before I shall describe the house which suggested the question.

That house is a new greenhouse, which was put up this last autumn in the Experimental Garden. It is the second house that was put together, on an entire new and very superior plan of construction; but is the very reverse of being a portable house. Before it was finished, I was asked, over and over again, to get hold of the best mode of having houses portable, and to apply the new kind of construction to them, which would leave nothing to be desired.

The Messrs. Jackson, of Kingston, father and son, are well known as one of the most practical firms in the nursery trade; and the father is also the father of the Experimental Garden, although he has not seen it from the very first day of its existence on the experimental cut. But these practical neighbours of ours got scent of the new style of hothouse building at the Experimental before our house was half finished. So they sent for our builder, and examined him on the practice and principle of the new style, with which style they were so much taken, that they gave him an order on the spot to erect for them, and to be a reference for their customers, a portable house of large dimensions. Were it not for the benefit of their friends, neighbours, and customers, this house—like all their houses—would be as firm a fixture as the new house at the Experimental; as all the nursery ground, with the exception of a few odd bits, is their own freehold property.

Well, before that house was half up in the Kingston Nursery, the plan and principle was so much approved of at the Experimental, that an entire new roof for the conservatory was determined upon. This has since been put up; so that we have it in three forms within a rifle shot; and all who see either of the three houses, think them a vast improvement on anything of the kind that has hitherto been done in hothouse building. I should like Mr. Fish to see these houses, and to describe them for me. I could give him a hotbed, and a rasher of streaky bacon, but I cannot show him the Experimental Garden under glass.

Mr. Jackson was so good, however, as to promise me, the other day, that Mr. Fish, or any of my friends, were quite welcome to see his new house; and, no doubt, any other respectable person may have the same privilege; and I would recommend hothouse builders about London, to take advantage of this, and inspect this house. But, in other cases, I should not like others, from mere curiosity, to give much bother to the firm, on my account, without bringing some grist, however small, to the mill. But order a few plants, and the thing is a settled privilege on both sides.

After seeing Mr. Eyle's new house, I shall give a section of the Messrs. Jacksons' new house, and all the particulars of those at the Experimental. The plan is certain to be adopted by all hothouse builders, on the principle of economy, as no rafter, or prop, or stay-bar, inside or out, being at all necessary, a house so constructed may be taken down, and taken elsewhere, as easily as taking down a bedstead, or a camp tent. The lights which roof the conservatory at the Experimental are just eighteen feet six inches long, and no rafter, prop, post, or stay-bar, is re-

quired to keep them up, or together, as long as the wood and glass stands.

The Messrs. Jackson's house is placed on two old side walls, twenty-two feet apart. It is a span-roof, springing from those walls, and it is hard upon forty feet long. The door is at one end, and is sufficiently wide to allow a horse and cart, with a load of specimen-plants, to enter in as safely as through a gateway. The ventilation is complete, and the whole, except the walls, might be taken down any day, without the risk of breaking a single pane of glass. The builder is Mr. Macrostie, of Kingston, who is also our principal glass-merchant, and who is the inventor of this style of hothouse building, the invention being hit upon this last summer. I heard that he had erected a large, cheap house for a gentleman at Ham, near Richmond, and I sent for him to learn the particulars. I saw the great advantage in a moment, and a new greenhouse for the Experimental was the first fruits of the consultation. The Experimental authorities being well known in these parts as good judges, with good taste, the Messrs. Jackson needed no consultation, but dived into the plan at once, knowing that what is good for the offspring could not be bad for the parent.

The new greenhouse had to be treated with hot water, of course, to be in keeping with the new idea; but the only new thing in that arrangement was the joints for the pipes, which joints will be the grand desideratum in the new portable houses. They can be fixed and unfixed as easily as the joints of a telescope. No stuffing or hammering, as on the common plan. A ring of vulcanised Indiarubber, about the thickness of my little finger, is put round the end of the pipe; that end is then put gently inside the socket of the next pipe, until the ring is just inside the socket all round; then a good push drives it home up to the end of the socket, and the joint is finished, and waterproof and fireproof, and no messing, or towing, or red leading, or anything more. The pipes will bend about at these joints, if it is necessary; and, when the whole is finished, you would hardly believe there was a made joint in the house, or any water in the pipes, for all the joints look wide open. But neither air nor water will escape these elastic rings,—elastic garters they might be called,—and this order of the garter will hold all the secrets within, against any force from without, against the cannon boiler itself, if need be. When such pipes are unjointed, the man, or his tackle, must pull out each pipe with earnest force, as the elastic rings "suck" as much as the hindrance by friction; but it is soon out with a bang, like uncorking old wine or whisky. Therefore, what could be more clean and convenient at the end of a lease, than bang out with them all. Take them to the next start, and push at them till they are all in as tight as before, and who would know the difference, if the landlord did not hear the noise.

These vulcanised rings are made to suit all sizes of pipes, and are sold by the pound; but I do not know who makes them, nor who sells them; but I hear they are in great demand for steam-engine work; and there is not the slightest danger about them, or any fear that they will leak, or get out of order. In one respect, they are dearer than the common hot-water joint of tow, twist, and red lead; but a couple of handy men will make from 60 to 100 joints with them in one day, in any open place where they can use their limbs without being hampered in their movements. They, therefore, come much cheaper to the builder; and they are invaluable where the pipes have to be altered or removed. Mr. Macrostie said that he used them for the last three years; but he did not seem to put more stress on them than on the common joint; and, this being the first time they are mentioned in our books,—as far as my reading goes,—I should like to hear the opinions of any parties who may have had them in use, no matter where, or how; as the merits of all new contrivances ought to be sifted before they are recommended for general use.

That was just the reason why I sent out the inquiries about portable greenhouses, when the subject was pressed

upon me. That subject is still open; but we are already in possession of many useful hints and ideas respecting it, for which I offer my best thanks.

The next question is, how to arrive at the best portable hot-water apparatus, without getting into hot water with landlords, if we have to remove the apparatus at the end of a lease. Rogers' conical boiler is the nearest kind of boiler I know of for that purpose, and these flexible, vulcanised rings are certainly very handy for undoing the joints. If Mr. Jones could place the "cannon boilers" on carriages, like martial cannons, the thing would be as complete as our artillery departments at Woolwich and elsewhere.

Mr. Jones might also give us a lift about the elastic rings for making portable joints. Perhaps he has them on sale, in sizes, to suit the different sizes of the pipes. He is said to be the largest holder of hot-water appliances in London; and, whether London is in Middlesex or Surrey, he is in the midst of London, and must know more about these things than we in the country. At all events, depend upon it, the question is a crying one among a large section of our readers; and nothing would please one more than to be able to fathom it to the bottom, and bring it up clear to the surface, and to the clear comprehension of all whom it does concern.

As to other gardening topics, nothing goes down now so much as cut flowers for balls, polkas, and petticoats. Cut Camellias, of all colours and sizes, are most in demand; the double white Chinese Primrose, in close bunches, the next favourites. Sprigs of Heaths are also coming much into favour for young ladies just coming out. Feathers and artificial flowers are much quizzed in the clubs, as smelling too much of plum puddings and stinginess,—two odd things for contrast.

My own keeping-room is rather gay this Christmas, with variegated plants, such as *Begonia Rex*, *Miranda*, and *Argentea guttata*, Sonerilas, Farfugiums, and lots of Cyclamens, all of which seem to do fair enough placed on trays, with the pots well packed in green moss, or the pots plunged into China vases, and also in moss. Damp moss is the life of plants that are kept for show in living rooms, where the air is so dry that no plant could stand it without the antidote. It strikes me that Cyclamen flowers will be the favourite flowers for the hair, when their bewitching beauty is once seen that way. All the polkas, and the tossings about in ball-rooms, will not hurt nor injure a Cyclamen flower, for nights and nights together. In knots of six or seven flowers, or in single wreaths across the forehead, they are alike most beautiful for young people; and of all the cut flowers, the Cyclamen appears to my eye to be the least assuming, so to speak. The breed of *Persicum* is the best. Long, firm footstalks; the colours from the purest ivory white to dark crimson, and the shape elegans.

D. BEATON.

SUNK GLASS-HOUSES.

(Continued from page 196.)

"WHAT are the advantages of these? Should I gain anything, and how much, in placing my greenhouse in a low dell? Or would it be as well to have it on a steepish, romantic spot? In the one case, I could form a reservoir inside, of water that comes from a small, constant spring, the water from which never freezes, until it has run a considerable length, but averages a temperature of 60°. Would a large basin at that temperature keep my plants from frost, the basin being beneath a planked, or grated, floor? In the other case, I should want no wall for the back of my house, as the sandy rock could easily be made straight. Should I gain any advantage in the way of heat, from the rock being on the face of the hill, and the average temperature of which, a few feet from the surface, is always a long way above the freezing point? I have been reading some philosophical works, and as they say, that the lower we go down into the earth the hotter it is, is it possible, by sinking and boring, to let

some of that heat to the surface; and if not, what can be the use of sinking houses and pits below the surface, instead of having all above ground, or giving a preference to one place over another? What with Humboldt's and Lardners, I am fairly puzzled. I should like to avoid artificial heating, if possible. Gardeners sink their houses at one time, and build them all above the surface at another; and what course to pursue I know not. Please try and unravel this tangled skein for me?"—*The gist of some half-score inquiries.*

I believe that all this is partly owing to the commotion raised about portable houses; and, had I anything at all tempting to write about, I should have preferred transmitting the whole affair to Mr. Beaton, who, according to many, would never be at a loss for the matter of a first-rate article, if you only gave him an old shabby broomstick, either as a text, or a hobbyhorse. Unfortunately, the most of us can only manage a middling article, when we are presented with a subject, about the ins and outs of which we think we are somewhat well acquainted. A plain man may thus be useful, but he can never make, or find, matter where the generality would never dream of looking for it, nor yet throw around it the halo of interest and wonder which seems so easy to a true son of genius. Hardly knowing where to begin, I will somewhat at random remark:—

1st. That sunk houses, or pits, and raised houses, have each their advantages and disadvantages, independent of position, according to the object aimed at. No doubt the sinking of such places was first resorted to for keeping in heat—first, by preventing radiation from exposed walls; and secondly, by covering the glass likewise, at night and cold weather, and thus preventing, so far, radiation of heat from it. The practice of sinking the bounding walls was, therefore, resorted to in cases where a high, somewhat uniform, temperature was required, as in Pine pits, or Cucumber and Melon pits, where even the walls were made the medium for throwing in heat from fermenting materials; and, in the case of cold pits, where tender plants were protected from frost, merely by preventing it entering through the glass, and the walls above ground. The more the walls were sunk, the less surface would be exposed to cold winds, as well as severe frosts. But in cold pits, the deeper the bottom was sunk, the more would the plants inside be subject to damp, and the more subdued and shaded would be the light which reached that part of the plant at the bottom of the pit. In pits, or sunk houses, where much heat is used, the same shading influence will act prejudicially; and hence, unless placed very thinly, and at a distance from the front wall, the plants will not thrive so well as in raised houses, with the light all round them.

The keeping heat in, or frost out, was the chief object in sinking the walls of glass-houses below the ground level. Much the same object might be attained by building on the surface and using hollow walls. These sunk structures were more used when heat was considered to be of more importance than light. Even now, however, give equal and similar surfaces of glass, and equal access to the sun's rays, and it matters not, as respects light, whether your walls are sunk or raised. It will matter as to warmth. Thus, supposing I put up a span-roofed house,—some sixteen or twenty feet in width, and some fifty feet in length, its two ends standing north and south, and the side walls some four or five feet in height, and opaque,—and I sink another house, of similar size, and in an open position, so that the side walls are only one foot above the ground level,—no more rays of light would be thrown into one house than the other. Such plants as Pines, Geraniums, &c., according to the temperature, would thrive equally well in either of such houses, provided they were placed little lower than the side wall plates. Peaches, Vines, &c., trained up the roof within fifteen inches of the glass, would flourish equally well in either house, as they would receive ample light on either

side. But if, in either house,—the floor of each being eight or nine feet from the ridge,—you resolved to have large plants standing in pots, or tubs, on the floor, in neither case would you succeed so well, as if the sides of the house were raised above the ground, and some two-thirds of these sides glass as well as the roof, as thus you would obtain light all round. Of course, this advantage is gained at the expense of requiring more artificial heat in severe weather. When even dwarfish plants were not thriving exactly to my mind, in a common lean-to sunk pit,—though the plants were pretty near the glass,—they soon improved when placed on the stage of a house built above the ground, even though that too was a lean-to, but with front glass lower than the front of the stage. The light thus struck in below the plants as well as above them, and the whole air contained within was more easily maintained in a state of active motion. Where their elegance and utility as to many purposes, and the growing large standards on the floor of a house, as well as small ones near the glass, or permanent plants trained near the glass,—where these are all desirable in one house, nothing will beat a span-roofed house, with most of the sides glass as well as the roof. When great heat is required, as in the case of Pine plants, and economy of fuel is a great object; or where, in a greenhouse, or pit, it is desirable to cover the glass from severe weather, instead of using much fuel;—sunk houses, or pits, will best meet the requirements of the case. When in deep sunk pits, with glass merely on one side of the top, as pits generally are made, and large plants are put into them somewhat thickly,—sunk pits should merely be looked upon as hibernatories, in which the plants may be kept during the winter, but not incited to grow, or the lower part of the plants will be injured.

2. The idea of sinking, or boring, as a means of heating, is new to me, and I can form no sanguine prospects for it; as, even if heat to a small extent might be thus attained, it might be so attended with gases, or water, &c., as to be a great evil instead of a benefit. The person who speaks of getting heat up from the earth, can have formed no idea of the depth he would have to go, and even that would be varied greatly according to circumstances. For instance, on the undrained Red Moss of Bolton-le-Moors, even the heat of summer, and the colds of winter, pass no further than seven inches. Beyond that depth, to that of thirty feet, there is always an uniform temperature of 47° , which is about the medium temperature of the locality for the year. In the tropics, a thermometer placed a foot beneath the surface varies little in the twenty-four hours. In our latitude, there is hardly any difference seen at a depth of from two feet to three feet and a half. That depth at which the temperature of the earth is uniform, never changing, varies according to circumstances, latitude, and climate,—being in some cases many feet, and in others only a few. To show the unlikelihood of getting heat from below (unless in the case of hot springs, &c.), I may mention, that, on an average, we must get down from fifty to sixty feet, to gain an increase of 1° in temperature. In some cases it is required to go nearly a hundred feet, in other cases little more than thirty. This gaining of a degree for that depth has reference to that increase over the average medium temperature of the place. These facts seem to be proved from the depth of artisan wells, and from noting the temperature in mines. The heat of the salt spring at Ceynhausen is 91.04° F.; the mean annual temperature of the atmosphere of the place, a little more than 49° : the depth below the sea 2,052 feet; height above, 231 feet. Thus an increase of temperature of 1° takes place for every 54.68 feet. At Monkswearmouth, near Newcastle, at 1,496 feet below the level of the sea, it would appear the heat increased 1° for every 57 feet of depth. In the latitude of Paris, $48^{\circ} 52'$, where the medium temperature of the atmosphere for the year is 51.478° , a thermometer placed in the vaults of the Observatory, at the depth of

88 feet, has stood at $53\frac{1}{4}^{\circ}$, and has not varied more than half a degree for sixty years. Whatever, therefore, may be done in deep warm mines, for forcing vegetables that are taken there for the purpose, and which are benefited by the absence of light, and whatever yet may be accomplished on a large scale, by the heat that now escapes from large manufactories, I have little hope to see the heat from the interior of the earth made available for horticultural purposes.

3. I will try and finish with a few words on *Position*, which will be just as applicable to gardens as raising a greenhouse. Low level grounds of large extent will always be earlier and warmer, than those in similar circumstances more elevated or varied by undulations. Low levels between surrounding heights will be very hot in the middle of summer; but, for all things at all tender, the position will not be nearly so good, as an intermediate, suitably sloping position between the hollow and the top of the height; as we often find the grass crisp from the loss of heat by radiation, in such a valley, while only a few score of feet higher up we find no traces of freezing at all. How often have we seen such a valley covered with a dense fog, whilst fifty feet above its level the atmosphere was perfectly clear. That fog may even be changed to hoar frost, and yet no trace of fog or frost be found on the higher level. Even in the same garden, I have often noticed glass on a low level covered with hoar frost, whilst some twenty feet higher, on other glass in similar circumstances, it had not begun to form. It is well known, that, above a certain height, the farther we rise, the colder it becomes,—a fact known to every one who has climbed a lofty mountain. But for a certain height, varying, no doubt, according to many circumstances,—say, from 50 to 200 feet,—the heat is greater and more uniform, than on the surface of a low level. The higher sloping ground not only gains an advantage from this heated air, but it is not supposed that it can radiate so quickly as the lower level ground; and that lower ground is also additionally cooled by the cooler air gliding down from the surrounding slopes. On this account, I should prefer the medium position, instead of one either in the bottom of the narrow valley, or one on the top of the hill. A steep slope to the south, or southwest, should also be avoided for tender things, as the sun would be apt to excite them too much early in spring, and thus place them more at the mercy of the frosty nights. This will not apply to an early-heated house.

I prefer, therefore, your house to be on the face of the rock, instead of over the reservoir of spring water in the vale, unless there should be any difficulty in getting water to the former place, as, for everything connected with gardening, an unfailing supply of water is a matter of first importance. You would gain but little, in the way of heat, from your rock wall; but it would be better than any one you could build, and you would lose but little heat, in comparison with having a high wall standing fully exposed. If you prefer the lower position, you had better content yourself with a moderate reservoir of water, as, unless very large, all the heat it will give out will not help you greatly in severe weather, and the help it would give, on a pinch, would be apt to be counterbalanced, by placing your plants in a fog bath. On going by the side of a stream in a hollow, after a warmish day, you must often have noticed a deep mist or fog hanging along the neighbourhood of the stream. As the air got colder than the water, the vapours that rose from the latter got condensed, and more especially if the cold air was already saturated with vapour. Supposing, then, that on a frosty night the air next your glass got cooled, it would give place to a warmer stratum of air, to be cooled again in turn, and each would fall to the water; and if at all moist previously, the warm vapour that rose from the water would be soon converted to fog, and thus fill your house. Such fog could only be dispersed quickly by artificial heat, changing the visible into invisible

vapour. With heating power, however simple, the little spring rivulet passing through the house would be very useful, as well as interesting. However simple the mode, we would advise all who wish to enjoy their greenhouses, to have means of heating them, not only in frosty, but in long periods of dull weather. Other things being equal, the greater space of atmosphere enclosed, the less trouble will the management entail. The smaller the number of feet of air enclosed, in proportion to outside surface, the sooner will such a house be heated and cooled, and consequently more continuous inspection will be required.

R. FISH.

ELVASTON CASTLE.

AMONGST the few places of note, shut up in strict seclusion from the rest of the world, Elvaston Castle was one which the pen of an eminent horticultural writer had made famous for its Pine trees, and features of an extraordinary character. Many and fruitless were the attempts made in years gone by to get a peep at this remarkable place. But that all-powerful leveller of distinctions, death, having removed the former proprietor of the place, its present possessor exhibited a more liberal spirit, and opened the long-concealed treasures of Elvaston to the inspection of the public, on certain occasions, and under certain conditions. As it often happens, however, when the difficulty of access was removed, the anxiety to see it, in a great measure, ceased also. Nevertheless, many availed themselves of the privilege: yet we have few descriptions of it in print. Possibly, some may have been deterred by the difficulty of describing a place differing so much from others in its principal features; or, perhaps, a feeling of delicacy may have prevented others from publishing what they did not approve of. Be this as it may, Elvaston Castle, though unquestionably an attractive place, is certainly not so much so as it was a dozen years ago.

The mention of Derbyshire conveys an idea of high hills, cascades, and all the features of rugged and romantic scenery; but, though Elvaston is, I believe, in this county, the situation is one exactly the reverse to the above. A level plain, extending apparently for several miles, through which the river Derwent sluggishly flows, and fields bearing heavy crops of corn and grass, with but a thin sprinkling of timber, and that not remarkable for size,—this will give you an idea of the natural scenery; and, though some low situations have the advantage of the more romantic outlines of mountain and water, here there is little or nothing that way, to vary the general monotony of the neighbourhood. Everything, therefore, that Elvaston possesses in the way of sylvan beauty has been added to it, few places, that I am acquainted with, having less assistance that way from their natural position. But I do not think the same effects could have been produced on a broken, uneven surface as is here produced on a level one; consequently, what most people would have regarded as an evil has been the very basis of all the operations carried on here for so many years, and with such untiring assiduity. The mere planting of a tree, or plot of ground—which, in very many instances, completes the work required for some years, when a natural group, or clump, is concerned—is not the case here, for trees have been planted to assume certain artificial shapes and purposes, which have taken a lifetime to attain; and the care and attention they have received during that time proves the undeviating purpose of those having the work in hand. But, as a more precise description of it may be preferable to generalities, I will here give such an idea of it as my memory will allow me, for I did not take any notes at the time I saw it.

The castle, or rather mansion, is of unpretending appearance, and is situated about five miles from Derby. The river Derwent flows between it and the Borrowash

station, on the Midland Counties railway, about a mile distant. I believe there is a high wall surrounding the grounds, or park, the approach by carriage-road being somewhat of the same description as the other features—that is, flanked with Pines the whole way; and, consisting of easy and agreeable curves, it is very likely the same as it was before the other grounds were planted. Nevertheless, it is proper to mention, that even this carriage-road has an edging, not of turf cut in the usual way, but of some low-growing tree, or shrub, clipped with mathematical precision about a foot high, and about double that in width, Pines of various kinds being planted beyond it. But this is not so remarkable as the long, straight avenue, planted on the turf, the trees leaving a clear opening of about eighty or one hundred feet: one end points to some important object, as a Church, or distant hill; while the other centres on other great features, to be noted hereafter. The front row of these avenues was often formed of the Irish Yew; second row, *Araucaria imbricata*; third row, *Cedrus deodara*; and behind that, some other trees of a miscellaneous character, all, however, being Pines. The inner end of one of these avenues was blocked up by a mass of Golden Yew, planted so as to form a peculiar object in the centre, and also to form some other work, which the visitor is suddenly introduced to by an intricate opening, the feature being a sort of architectural imitation of a court, with colonnade, arches, &c., complete. Sculpture is very sparingly introduced, and that very prudently, perhaps; for one or two of the most remarkable of these courts, or gardens, as they are called, is certainly spoiled by an ugly glazed building, which may have a parallel in Japan or China. To gain access to one of these oddities, it is necessary to step over a barrier at the threshold, upwards of two feet high; but the many fanciful figures within the enclosure, in which you seem shut up from the rest of the world, inspire the visitor with wonder and admiration of the perseverance which actuated the designer and executor of these works. Here are columns of Yew,—accurately clipped to a style which Sir E. Barry, or anyone else, would have little to improve upon,—surmounted by an eagle taking wing, or, in some cases, a cock; also a series of columns in exact line, bearing an archway of the same sylvan material. But, as may be expected, no ingenuity could obtain a perfectly green surface on the underside of the roof of an aisle; yet everything possible was done, and a degree of symmetry was attained which could hardly be excelled in masonry. Some of the columns of Yew were surmounted with the figure of a crown, formed by bending (perhaps on an iron frame) the boughs into the proper shape; and, at certain places, portions of the Golden Yew were grafted on with good effect, to represent gems, or other ornaments, on that peculiar article of royal attire. Other plants were also used as well as the Yew—namely, the Chinese and American Cedar, and several low-growing shrubs. The central portion of one of these courts was occupied as a garden (so-called), the plants forming it being low-growing shrubs, clipped to a certain fanciful shape, and in such a manner as to occupy just a certain position as a flower-bed. Of course, several plants were wanted for each, and some variety was given to the never-changing appearance they must have, by the different hues of the foliage—such as the common Juniper, Yew, Golden Yew, *Kalmia latifolia*, &c. But the chief merit was the novelty and accuracy with which each part was done.

It may be proper here to say, that the Chinese summer-house, alluded to above, was intended to overlook the garden, which it partly does. But the garden falls short of interest, compared with the columns, pyramids, long colonnades, and wall-looking buildings, with accurately-formed doorways; and other things, impossible to particularise. It is sufficient to say, that, generally speaking, everything was in pairs—one side represented the other;

and the openings, leading elsewhere, were all concealed. Altogether, indeed, it seemed a wonderful achievement.

As I have before stated, the avenues, of which there were several, were all on level ground. The gardens, or courts, were also on the same plain, only that an artificial mound had been made for the Chinese temple, to overlook the quaint clipped work of the garden.

We were afterwards ushered into a department where the ground has been made to assume a broken and romantic appearance, a large piece of water being introduced; with rockwork on its shores, of a truly wonderful character. This lake is formed by excavating the ground, and using the material so gained in making the mounds at the sides; and stones of large size have been brought from a great distance, to make this exceedingly good imitation of natural rock, which forms so important a feature of this lake. This water is surrounded by a walk, through groves of the rarest Pines, in which care has been taken to have such views open as point to important directions. The rugged appearance of stones of two tons weight and upwards, jutting out amongst groups of Junipers of various kinds, and now and then frowning over the water in sullen gravity, certainly gives an appearance to the scene that would tend to cheat one into the belief that the thing was real. But, in one or two instances, in which these huge boulders have been made to assume an artificial shape,—a circle, for instance,—the notion is at once dispelled that the mass is a natural one. Nevertheless, with even this defect, I consider the lake and its accompaniments the most remarkable features at Elvaston, all being entirely formed by hand. The well-introduced mounds are especially useful, and, the whole being planted, perhaps too profusely, with the various Pines of which this place is so rich, an excellent effect is produced.

In one respect, I was somewhat disappointed at this place. The Pines, of which we have heard so much, were certainly not better specimens of their kind, than are, in many cases, to be met with elsewhere. Some allowance must be made for the situation being unfavourable to the more delicate ones; while some of those which are most esteemed, as likely to become useful timber trees,—as *Pinus insignis*, *P. Douglasii*, *Cedrus deodara*, *Abies marinda*, *A. Cephalonica*, *Picea nobilis*, and others,—were certainly not so good at Elvaston as occasionally met with elsewhere. But their numbers made up for their want of size, and the situation is certainly not a favourable one. The immense quantity of some of the kinds is astonishing, and shows that a liberal spirit had been at work in procuring so many costly specimens; and most of the important ones had been judiciously planted wide enough apart to ensure their having sufficient space when full grown. Large quantities of Scotch and Spruce Firs were planted as nurses, or for shelter, and some had been removed; but I was told that a very severe winter had greatly injured many of the specimens, the low and inland situation of the place rendering it liable to severe frosts.

I think the grounds were stated to extend over an area of one hundred acres, including about ten acres of water. As the avenues alluded to jutted out a long way beyond the ordinary grounds, and as the ends might not be more than 200 yards wide, it will be seen that a large space in the centre was devoted to the various intricate features I have called courts. The soil, though low, is not wet, being a pale-coloured hazel loam, resting, I believe, on sandy gravel; but the flatness of the ground, and its slight elevation above the river Derwent,—the lake, in fact, being fed from that river,—give it little chance of an effectual drainage. The kitchen garden and Graperyes, too, gave tokens of water being too abundant for the well-being of everything there. But in a nursery, where

M. Barron has some fine Conifers of all the more recent introductions, were some excellent Wellingtonias, and other species, which seemed quite at home, and were

doing remarkably well: so that, I should say the soil, if not the climate, was all that could be desired.

But one of the most usual plants of other gardens was said not to prosper here—the common Box, and for that reason it was so little planted. Other plants were likewise absent, and, the neighbourhood being in a great measure destitute of large and useful timber trees, the conclusion naturally arrived at upon these matters is, that it is more favourable to the production of Derby cheese and long-woollen sheep, than to English Oak. How far Indian and Mexican Pines may suit the soil, remains yet to be proved; as some, that thrive well for a dozen or twenty years, are at length caught in one of our “winters extraordinary,” or die from some unaccountable cause, which a worthy friend of mine calls constitutional debility. Be this as it may, a visit to Elvaston will amply repay those whose ideas of beauty are moulded into artificial forms, or who, on the other hand, like to look upon those varied figures, which, as trees, look so different to most of our indigenous ones; and the beholder cannot be otherwise than impressed with admiration at the assiduity displayed in following out an object once started: for an imitation of a crown, a bird, a *fleur-de-lis*, or other object was not effected in a year or two, but in perseveringly following out for many long years the project once determined upon. That the result attained is worth the cost is a question not so easily answered, and some go as far as to call it a waste of human industry. With this I cannot entirely agree, although I, for one, would not like to repeat all the quaint objects which form so remarkable a feature at Elvaston Castle.

J. ROBSON.

THE WILLOW.

TRULY, we live in a beautiful world, clothed with noble and lovely objects; and grateful we ought to be that every part of the habitable globe produces some useful plant, or plants, that are serviceable to man. Even the wet, low marsh may be turned to an useful purpose, for it will produce the flexible Willow; and, in hot countries, the food-giving Rice plant. Yet these useful articles will not thrive without labour and culture; for the fiat went forth, that man should eat bread by the sweat of his brow,—without culture, Thorns, Briers, and Thistles, spring up, and choke the more needful objects for man's use. Some of these reflections passed through my mind on crossing over some ill-managed Osier grounds, in Staffordshire. They were ill-managed in two or three ways. In the first place, they were not kept clear from weeds; in the next, the ground was planted with a mixture of bad kinds of Willows; and, lastly, they were allowed to grow too long without cutting.

Now, as land is becoming every year more scarce in this country, even wet, marshy ground should be made useful; I mean, of course, where it cannot be drained to grow corn, or grass, and there are many large and small plots so situated. I am certain, if such plots were properly managed and planted with the best kinds of Willows, they would yield a large profit on the outlay.

I propose, therefore, in this paper, to give instructions how to prepare the ground, how to plant it, and how to manage it afterwards, concluding with a list of the most approved kinds, suitable for various purposes. I consider this an important subject, for labourers are numerous; and such spots of ground are not only unsightly, but actually unwholesome, giving forth exhalations,—pestilential and fruitful causes of distressing diseases.

Preparing the Ground.—Supposing, then, a landowner, or farmer, has a tract of marshy ground on his estate, or farm, be it more or less; and supposing him willing to follow my advice, and convert it into a profit-yielding affair; he would, in the first place, level the hillocks, if any, into the holes, making the whole plot of an uniform level: if there were any Briers, or other scrubby shrubs, they would be cleared away root and branch. When that is done, the piece of ground should be set out in long beds, eight or nine feet wide; then trenches dug out between every bed, eighteen inches deep and fifteen inches wide, sloping the sides, so that each trench would be a foot wide at the bottom. Level this soil taken out of the trenches over the beds, which will add to

the depth of soil. In extremely wet situations, these trenches had better be six inches wider. As soon as this soil has become moderately dry, let the beds be trenched as deep as possible, burying all the turf and weeds at the bottom. The best time to do this work, is in July, August, and September. The surface may be left rough, in order to obtain the benefit of exposure to the summer sun and autumn frost. It will be in fine condition when the planting time arrives.

Planting.—This may be done during the winter; but if it is done before the year is out it will be all the better. Procure shoots of the kinds mentioned below; cut them into lengths of eighteen inches; and, with a common dibber, insert them a foot deep in rows, across the beds, two feet apart, and a foot and a half from set to set in the row, taking care to press the earth close to each cutting, and as firm as possible. They will require no further care till the weeds begin to grow.

After Management.—During the whole of summer, the hoe should be used freely. Not a weed should be allowed to get any strength. Should any bad weeds, such as Docks or Water Thistles, appear, they should be got clean out with a spud. With this care, the Willows will grow freely; but I would advise not to cut them the first year, unless some grow so strong as to injure their neighbours. These may be cut down, and used for small work, or to make cuttings for some other plot. As soon as the leaves fall, let the whole plot be carefully dug over, and so left to benefit by the winter frosts. The second summer repeat the hoeing process as they need it. If well managed the previous year, but few weeds will appear; but these few must be effectually kept from getting a-head. In the autumn of the second year, the whole of the Willows must be cut down, and a good mulching of manure given, and dug in. The third season will yield a good crop of fine shoots, from four to eight feet long; and this crop will repay the whole outlay; and the plantation will, if so managed every season, give a good profit, and reward the owner for all his expense, labour, and care. I have known Osier beds, so managed, yield as many Willows as were sold for seven, or even eight pounds, per acre. Is not this far preferable to that of allowing such marshy plots on an estate,—plots that are not only unsightly, but positively pernicious.

Lastly, it only remains now to give a list of the most profitable and useful sorts for this purpose.

SALIX ALBA.—This is known as the *Huntington Willow*. In Lincolnshire, and other fenny counties, this is grown as a pollard. It is used for fuel and poles, and its bark is used for tanning leather. Planted in an Osier bed, it affords shoots strong enough to make crates, as well as coarse baskets and hampers. There is a red-twigg'd variety that grows to a lofty tree in rather drier land.

***SALIX VIMINALIS** (the Twiggy Willow).—The leaves are long, waved at the edges, but not cut, shining green above, and silvery underneath. The shoots grow long, straight, and are very tough, and are well adapted for the larger sorts of baskets, hampers, hoops and crates.

***SALIX STIPULARIS** (the Eared Willow).—The two-year old shoots make excellent rods for baskets, cradles, and bird cages; and the one-year shoots are used as filling—that is, to work in among the stronger shoots. The shoots are long, and nearly equal in thickness their whole length. The leaves are set on alternately; footstalks long and narrow, rather cut at the edges, green and smooth on the upper surface, and woolly underneath. At the foot of each leafstalk there are two short leaves, or bracts, resembling a pair of ears, hence its specific name.

SALIX RUBRA (the Red Willow).—This is a most excellent basket Willow. The shoots are very long, tough, and of a purplish colour, smooth, and very pliable. The leaves are very narrow, long, often three or four inches, and are bright green on both sides.

***SALIX FORBYANA** (Forby's Willow).—This is the very best Willow for fine work. The shoots are of a yellowish colour, smooth, very flexible, and tough. The leaves are saw-toothed, stand on long footstalks, dark green above, and pale blueish underneath.

***SALIX TRIANDRA** (Long-leaved triandrous Willow).—A most excellent basket Willow. Its shoots are long, slender, pliable, and tough, smooth below, but fluted towards the top. The leaves are very long, and closely and deeply cut at the edges.

SALIX VITTELLINA (Golden Willow).—This, in good moist land, forms a very ornamental tree. Planted as an Osier, it is exceedingly useful. The shoots are moderately long, and very tough, and of a rich shining-yellow colour. It is well adapted for the finer kinds of basket-work.

I am indebted to "Sowerby's English Botany" for the above descriptions, by which any observing person may know the different kinds, and select some, or all, of them for his Willow grounds. The first species requires a deeper and rather drier soil to produce the kind of wood I have described. I should prefer those marked thus * where they can be procured. The Messrs. Backhouse, of York, formerly had the best collection of Willows I ever met with in any nursery.—T. APPLEBY.

CALCEOLARIA CULTURE.

I MUST confess my surprise on reading Mr. Robson's article upon the failure of the Calceolaria. To remove his gloomy foreboding of the future failure of this bright gem of the flower garden, I do not for one moment pretend to offer anything new, or superior, on its cultivation, but, as desired, confine myself to facts alone.

Last season, also in 1857, I planted out 1,000 Calceolarias in beds and ribbon borders. 1857 was a most trying season for this plant, but last season was much more so. During both of these hot summers, out of this 1,000, I lost, at the most, half-a-dozen. They were strong, dwarf, bushy plants, and, in respect to bloom, all that one could desire—right through, and just such beds, strips, and girdles, as Mr. Beaton would have pronounced excellent. The soil is a close loam, with a stiff loamy subsoil, and ragstone bottom.

This land has been under cultivation for vegetables at least a century. The situation is three miles from Maidstone, up the Medway, on the southern slope, about 300 yards from the river, a situation upon which the sun beats exceedingly.

Towards the end of September, cuttings were taken from the strongest and shortest in joint, and a frame prepared by filling within a foot with dung from an old lining, trodden down: no heat arose, of course. On this, six inches of common soil, with a barrow-load of road sand added, was put, and trodden down very firm, in order that the plants established in it might be removed with a ball. The cuttings were put in firmly, well soaked, and shaded from the sun; they were neither kept too wet nor too dry; through the winter they were protected from severe frost; all air possible given when struck; and their heads pinched out when beginning to grow.

Now, about the middle of March, I removed them from the cutting-box to rough cradles—say, on an east, south, or west border, first spreading on the ground selected a heavy coat of well-decomposed dung, or leaf mould, dug in and well mixed up with the soil, at least eight inches deep. If the soil is in good condition, give a thorough good treading. This is a main point, if you want to remove your plants in May with a close ball. Commence to nick out with a spade, a bed six feet wide, and put, in the young plants, six inches apart—no closer—each way pressing the soil tightly around the balls of each plant as you proceed; and well water in, if a dry time. Protect with a few poles, or hoops, for mats, against severe frost, not to keep out the frost, which is no matter so long as the sun is not allowed to shine on them before they are thawed, which the mats will prevent. The watering of these plants must be thoroughly looked to, as they will root fast in this new situation, especially in April.

Now for the final shift to beds and borders, all of which have been broken up at least fifteen inches deep with a good coat of dung, well forked in on the surface.

Here it is necessary to make your bed firm, by treading, for their last reception. I now remove with a spade each plant, cut out with a square of soil, six inches all ways.

Suppose these plants had remained in the cutting-box, and no attention paid to air, or stopping, and then torn limb from joint in the effort to divide the mass of roots,—what a contrast they would present! I fear neglect is, and has been, more fatal to this plant than all the diseases to which they are said to be subject. In planting out, a hole should be dug for each with a spade, and the soil made particularly firm around each plant, and a regular good soaking given with a rose-pot.

I will now endeavour to account for their dying off. It is often through loose planting, and a rush from the nose of the water-pot washing out the mould from the roots: then, during the long hot days in June, such plants fade and die on the first trial. Hence, the necessity of sound-rooted balls, tightly planted in trodden ground.

The Calceolaria planted well and soaked in, last season, got on well without so much care through its first blooming as it

required afterwards; and here is the rock upon which so many foundered this season. Hardly before the first batch of bloom was up to the point, in set those most unusually hot days which threatened death and destruction to the *Calceolaria*. Now, be the soil, plants, or locality, ever so favourable, do you for a moment imagine these will carry this plant through such a season without every now and then a thorough soaking of water?

How often is it said, by men who ought to know better, that watering does no good, but much injury, the truthfulness of which I admit under certain conditions. Now, it is argued watering binds the soil, and causes burning, as it is called. I admit the fact,—watering drives the air out of the soil as it enters, and, with a hot sun, renders the soil tenfold more a conductor of heat than before; but, suppose, after a good soaking, while the ground is yet mellow, you run over it in the way of a good scuffle of the surface. Will watering do harm then?—does not this newly broken up surface become again charged with air, which is a non-conductor of heat? I believe that I owe my success, during these two last seasons, chiefly to this point,—a good soaking when needed, followed by a stir of the surface.

This system applies to all bedding-out plants, and especially the *Verbena*, during last season.

Some will cry out, it is impossible for us, in a large place, to follow such a system—one could do nothing else but water in such a season. I believe that where there is a will, as the saying runs, there is a way. Are not such failures as we have heard of but little short of a thorough waste of time? Look at propagating and all after-attention, and what for, but to raise plants to disgrace, and to disfigure the place? I maintain such is the case, if they do not attain to a certain degree of perfection in blooming. Is not this spoiling the ship for a pennyworth of tar? Extraordinary seasons require extra effort and perseverance, instead of talking of bad seasons and disease. Let us first quit ourselves like men in this matter; and, as all reforms must begin at home, let us be upon the look out for another hot season, and be prepared for it by the lessons taught by the last.

I chiefly grow *Calceolaria viscosissima* and *superba*, and will cheerfully send Mr. Robson, or any friend, next September, 1,000 or 5,000 cuttings of this excellent sort, if still at my post. Or, next March, I will send to anyone 100 plants for every twelve of *aurea floribunda*.—J. SIMMONS, *Barnjet, Barming, near Maidstone*.

COX'S ORANGE PIPPIN.

In a notice of *Cox's Orange Pippin*, in the November Part of THE COTTAGE GARDENER, I find some remarks reflecting on the decision of the Judges, who, at the Horticultural Society's Fruit Show, held in Willis's Rooms, in 1857, awarded the first prize, for quality, to *Cox's Orange Pippin*. The writer of the remarks, which I wish now to notice, candidly owns that he had no opportunity of testing the merits of this particular Apple until the present season; and, while admitting the well-known fact, that the quality of Apples is affected by varying seasons, nevertheless maintains, that, at its best, *Cox's Orange* can never equal the *Ribston Pippin*. With all due deference, "H." will, perhaps, permit me to tell him, that *Cox's Orange* was indubitably better in every particular than any Apple exhibited in competition with it last year. The most promising specimens of the *Ribston Pippin* were cut and tasted, and, to the surprise of myself and my colleague, we found in *Cox's Orange Pippin* an Apple superior to it.

After the decision of the Judges had been made known, some surprise was expressed by persons present, and we were asked if we had forgotten the *Ribston*. We gave our inquirers the opportunity of questioning our decision by allowing them to taste; and the opinion was unanimous, that the *Ribston* had at length found a superior.

I find, on referring to the awards of the Judges at the second Fruit Show, held last November, in St. James's Hall, that the Judges have affirmed the excellence of *Cox's Orange* by placing it second, when placed in competition with many others: this I take to be sufficiently confirmatory of the excellence of *Cox's Orange*. It is nothing against it, that an Apple superior to it has been brought into notice.

The season just passed was altogether exceptional, and its influence on fruit proportionate. We have not had so dry a season for eighty-one years, and a dry season suits the *Ribston*. Indeed, it has been better with me than I ever before had it. The *Ribston* was raised on magnesian limestone; *Cox's Orange* on a

rich alluvial soil, and in rather a low, moist district. I cannot forbear saying, that "H." has committed himself to an opinion that would have been better reserved till the experience of other seasons had confirmed it. And in conveying censure on men, who conscientiously endeavoured to discharge the duty entrusted to them, "H." has again hurried to a conclusion that is neither courteous, kind, nor just.

"H." need not be alarmed on account of the public suffering through the extensive cultivation of *Cox's Orange*; it is an Apple that I venture to prophecy will give more satisfaction than the *Ribston* now does, even though it has not received the sanction of so great a letter in the alphabet as "H."—I., one of the *Judges at Willis's Rooms, 1857*.

THE INFLUENCE OF BOTANY ON CHARACTER.

We commend the remarks which follow to the attention of all our readers, be they old or young, rich or poor. Although they may not need the lesson which those remarks impart, there is a freshness and wholesomeness in every sentence—an evidence of latent good in man—which must cheer on every one who is labouring to benefit and elevate his brethren:—EDS.

I am not about to praise myself, but simply to tell a round, unvarnished tale of what botany has done for me and others. I have nothing to boast of, for I doubt not but I should have been in some convict establishment before now, if Flora had not stepped in to rescue me from amidst crime and ignorance. When eight years old, I was in the workhouse; from nine to about thirteen, I lived among cadgers, thieves, and prostitutes, and learned not a few of their pranks. I was early placed in cotton mill, but my leisure hours were spent in the above unclean company. The fair goddess appeared to me for the first time in the shape of an old Culpeper's "Herbal," which had been lent to my brother. We were so taken up with the plates, that we resolved to go into the fields to see if we could not find some of the plants pictured in the above book. We succeeded in discovering some, which made us anxious to find more, until we were fairly in love with the pastime.

I had learned to read in the workhouse school; so, after I became acquainted with "Culpeper," I spent the winter nights in rambling about shops seeking books with plants in. The next book I saw happened to be the right one: it was "Conversations on Botany." I inquired the price, and paid a shilling on it that I had saved, till my brother and myself got the requisite sum. Having procured the work, it found us little worshippers, and gave us little opportunity for mixing among our poor benighted neighbours. The first year we knew the Linnaean system of arranging plants, or rather the classification. In my sixteenth year, I entered one of the local botanical societies, which are pretty numerous in this part of the country. I was made Vice-President, which post I held until I went to learn gardening.

At the numerous botanical meetings in Lancashire, all sorts of men are generally in attendance,—the steady and otherwise, the ignorant and the informed; and though the meetings are mostly held at public-houses, they are nevertheless agents of civilisation. While attending the above meetings, I became acquainted with two persons, one of whom could not read and was a collier, the other a sawyer, and both were drunken characters. The first time, they came to the meetings out of curiosity, and then became regular attendants. I was chosen by them as a teacher. After teaching my pupils for about a year, I called upon one of them. He was upstairs dressing. His wife thanked me for keeping her husband from the alehouse, excepting on meeting nights. She said he never had been so kind to her since their marriage, as he had been since he began to botanise. The collier coupled entomology with his botany, and has made good collections of insects—in fact, he may be said to be a walking catalogue. The two have had no time for drunkenness since they began riding their hobbies.

The working men of Lancashire who pursue botany, or any of the other sciences, are a quiet, unassuming class of persons. Great numbers of them can tell the name, class, and order of almost any plant in a day's walk, although their occupations are not with plants. Being once in conversation upon the benefits

to be derived from botany, an old clogger who attended the meetings said, he had followed botany for fifty years, but did not remember that he ever received a penny on account of the science, yet money could never buy the happiness he had had during his life from botany. A powerloom weaver, who had a good knowledge of mathematics, taught me arithmetic, and I taught him something of my favourite science.

When I was younger I was like most young converts to anything: I thought it almost criminal for anybody not to be a botanist. I have not lost my enthusiasm yet; but I do not now even dream of making all gardeners botanists.

I have found by experience, that adults are but grown children. They must have something to do, when not at their ordinary employment, or they generally run into mischief. What numbers of our fellow creatures might be rendered happy, if they had but been taught something of science in any branch.

I am taught by gardening to always have something laid in store to do when I cannot follow my everyday work. I study perspective in the propagating-house, and even along the streets of the town. It has become habitual for me to lay up something to do in the future,—so that time is never a burden. The beer-house would have little trade, if men could be taught to make a rational use of their leisure hours.

I have digressed from my subject a little, to show young gardeners who read your paper the importance of always setting themselves something to learn—something to do. The maxim of the great American philosopher, "Shun pleasure and it will fly after you," would be well to follow in regard to those pleasures that teach us nothing.

I have seen young gardeners waste as much time in twelve months as would be required to teach them botany. Some gardeners I have seen sneer at the science, and have heard them say it was no good to them.

Happening one day to pay a visit to one of these worthies, he showed me a Fern that should have been *Pteris reptans*, for so it was labelled: I found he was wrong, for the one he showed me was not a trailer at all. I told him that the term *reptans* meant trailing. So he owned his mistake. If botany did no other thing for gardeners, it would teach them the meaning of most of the literary words and scientific terms used in gardening, besides expanding the mind, and giving them a real love for the profession.

If the matter I have penned is unsuited to your pages, cast it into the waste-paper heap. I am like a child, I must do something, even if I do wrong. I am yet young, and seldom despair, so will abide by the decision of the Editors of THE COTTAGE GARDENER.—JOHN HAGUE, 22, Victoria Street, Ashton-under-Lyne.

A DESCRIPTIVE LIST OF POTATOES.

(Continued from page 151.)

Fox's SEEDLING.—This is a very old, yet useful, round variety. Tubers yellow, good size, early; tolerable eye; moderate haulm. A good cropper. Not so liable as some varieties to the disease. A good keeper.

EARLY RADICAL, alias *Liverpool Radical* and *Cambridge Radical*.—A very excellent Potato. Tubers full size. Boils very white and floury. Tolerable eye, moderate haulm, and good cropper. I believe this to be identical with the *Regent*.

LA ROHANNAISE is a fine large variety. Moderate haulm, tolerable good eye, and good cropper.

EARLY OXFORD (SODEN'S).—A well-known, and highly-esteemed variety, similar in appearance to the *Regent*. Boils very white and mealy. Full size, with a good eye for a large Potato. First quality, moderate haulm, good cropper, and keeps well. This is a good Potato.

TUSSEY'S SEEDLING.—This is a round, White Potato. Nice even eye. Full size, strong haulm, and good cropper.

CHALMORÉ KIDNEY.—This variety was introduced by Messrs. Tyso and Co., of Wallingford. This is a full-sized second early variety, with even eye, moderate haulm, and good cropper.

CONQUEROR (THURSTON'S).—Introduced by Mr. Thurston, of Stowmarket, in 1848. This is a Kidney variety. Full size, boils floury; nice eye, good quality, and productive. Rather a strong grower.

MIDSUMMER KIDNEY, alias *Miller's Kidney*.—This is a very large Potato, the shape of the *Alstone Kidney*, but quite distinct from that variety. Tubers very large; even eye, early, and pro-

ductive, but not a strong grower. A fine variety for exhibition, but liable to the disease.

EARLY PROLIFIC.—Introduced, I believe, by Mr. Grigor, of Norwich. This is a round White variety. Middle size, good eye, early, and productive. Not a strong grower.

MANCHESTER BLUE.—This is an old variety, but not so much grown as it was a few years since, in consequence of its being liable to the disease. It is, however, a very excellent Potato. Nice even eye, and a good cropper and keeper. Rather a strong grower. A distinct variety.

BOSTON KIDNEY.—This is a large-sized Potato. Tolerable eye. Strong grower, and good cropper.

LANCASHIRE WHITE, or *White Roughs*.—This is another old favourite variety, not so often met with as formerly. Six years ago, my principal crop was of this variety. It is a large Potato, with rather deep eyes. Strong grower, good quality, and productive.

PROTESTANTS.—This variety is grown extensively by my neighbour, Mr. Perk's, for the market. It does exceedingly well with him, and is a great favourite. Tubers fair size; tolerable eye; strong habit; moderate cropper; but a good keeping variety.—EDWARD BENNETT.

(To be continued.)

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 200.)

CHERRIES.

Bouquet Amarelle. See *Cluster*.

BOWYER'S EARLY HEART.—Rather below medium size, obtuse heart-shaped. Skin amber coloured, mottled with red. Flesh white, very tender, juicy, and sweet. A good bearer, and an excellent early cherry. End of June.

Brune de Bruxelles. See *Ratafia*.

Bullock's Heart. See *Ox-Heart*.

BUTTNER'S BLACK HEART.—Larger than the common Black Heart; heart-shaped, and flattened on one side. Skin glossy, deep-blackish purple. Stalk an inch and a half long. Flesh half tender, juicy, dark red, and with a particularly pleasant flavour. A superior variety to the common Black Heart. Ripe in the middle of July.

BUTTNER'S OCTOBER MORELLO.—Large, round, and somewhat oblate, and indented at the apex. Skin thin, and of a reddish-brown colour. Stalk slender, two inches long. Flesh light red, reticulated with whitish veins, juicy, and with a pleasant sub-acid flavour. This is an excellent culinary cherry, and ripens in October.

BUTTNER'S YELLOW.—About medium size, roundish-ovate. Skin entirely yellow; becoming a pale-amber colour when highly ripened. Stalk an inch and a half long. Flesh firm, yellow, sweet, and very nicely flavoured. The best yellow cherry there is. The birds do not touch it. Middle of July, and hangs till the end of August.

CARNATION (*Nouvelle d'Angleterre*; *De Villeune*; *Rouge pâle*; *Wax Cherry*).—Large, round, and flattened, inclining to oblate. Skin thin, light red at first, but changing to a deeper colour as it hangs; pale yellow, or amber, where shaded. Stalk an inch and a half long, and stout. Flesh pale yellow, rather firmer than in Dukes generally, juicy, and with a fine, brisk, sub-acid flavour, becoming richer the longer it hangs. Ripe in the end of July and beginning of August.

Cerise à Bouquet. See *Cluster*.

Cherry Duke of Duhamel. See *Jeffreys' Duke*.

CLEVELAND BIGARREAU (*Cleveland*).—Large, obtuse heart-shaped, sometimes with a swelling on one side near the stalk. Skin pale yellow, with bright red next the sun, and mottled with crimson. Stalk two inches long. Flesh yellowish white, half tender, juicy, sweet, and richly flavoured. Ripe the third or last week in June and early in July.

CLUSTER (*Cerise à Bouquet*; *Bouquet Amarelle*; *Flanders Cherry*).—Small, produced in a cluster of two, three, four, or five together at the end of one common stalk. Skin thin, at first of pale red, but changing to darker red the longer it hangs. Flesh white, tender, and juicy, very acid at first, but becoming milder as it hangs on the tree. Ripe from the middle to the end of July.

COE'S LATE CARNATION.—Medium sized, roundish. Skin reddish yellow, clouded and mottled with bright red. Stalk two inches long. Flesh tender, juicy, with a brisk sub-acid flavour, becoming mellowed the longer it hangs. Ripe from the middle to the end of August, and continues to hang till September.

Cœur de Pigeon. See *Monstrous Heart*.

Common Red. See *Kentish*.

CORONE (*Belcher's Black*; *Black Bud of Buckinghamshire*; *Black Corone*; *Black Orleans*; *Herefordshire Black*).—Small, roundish-heart-shaped. Skin deep black-purple. Stalk two inches long, inserted in a deep, narrow cavity. Flesh dark purple, very firm, tender, juicy, and sweet. Ripe in the end of July and beginning of August.

Dauphine. See *Belle de Choisy*.

Doctor. See *American Doctor*.

DONNA MARIA.—Medium sized, roundish. Skin dark red when at maturity. Flesh dark, tender, juicy, and briskly acid. Ripe in the middle of August.

Double Glass. See *Great Cornelian*.

DOUBLE NATTE.—Rather large, roundish, a little compressed, and inclining to ovate. Skin dark brown, or brownish black. Stalk slender, sometimes nearly three inches long, and bearing leaves. Flesh very red, tender, and very juicy, with a brisk, sprightly acidity. Ripe in the beginning and middle of July.

Doucelette. See *Belle de Choisy*.

DOWNER'S LATE.—Fruit produced in large bunches, medium sized, obtuse heart-shaped. Skin of a delicate clear red on the exposed side, but paler and mottled with pale yellow where shaded. Stalk an inch and a half long. Flesh pale, tender, juicy, sweet, and richly flavoured. Ripe in the middle and end of August.

DOWNTON.—Large, roundish-heart-shaped, much compressed, nearly round. Skin pale yellow, stained with red dots, semi-transparent, marbled with dark red next the sun. Stalk an inch and a half long, slender. Flesh yellowish, without any stain of red, tender, deliciously and richly flavoured, adhering slightly to the stone. Ripens in the middle and end of July.

Dredge's Early White. See *White Heart*.

DUCHESSE DE PALLUAU.—Very large, oblate, and pitted at the apex. Skin thin, of a brilliant red colour, becoming dark red as it ripens. Stalk an inch and a half long. Flesh very tender and juicy, with a brisk and agreeable acidulous flavour; juice coloured. A very fine cherry. Ripe in the end of July.

Duke. See *May Duke*.

Dutch Morello. See *Morello*.

EARLY AMBER (*Early Amber Heart*; *Rivers' Early Amber Heart*).—Above medium size, heart-shaped. Skin pale amber, with a flush of red next the sun. Stalk two inches long. Flesh pale yellow, juicy, sweet, and richly flavoured. Beginning of July.

Early Black. See *Black Heart*.

Early Duke. See *May Duke*.

EARLY MAY (*Small May*; *Indulle*; *Nain Précoce*).—Small, round, slightly flattened. Skin lively light red. Stalk an inch long, slender, deeply set. Flesh soft, juicy, and acid. Middle of June.

Early May Duke. See *May Duke*.

Early Purple Griotte. See *Early Purple Gean*.

EARLY PURPLE GEAN (*Early Purple Griotte*; *German May Duke*).—Large, obtuse heart-shaped, slightly flat-

tened on one side. Skin shining, dark purple, almost black. Stalk slender, from two to two and a half inches long. Flesh dark purple, tender, and very juicy, with a very sweet and rich flavour. Ripe in the middle of June.

Early Richmond. See *Kentish*.

Elkhorn. See *Tradescant's Heart*.

ELTON.—Large, and heart-shaped. Skin thin, pale yellow in the shade, but mottled and streaked with bright red next the sun. Stalk two inches long, slender. Flesh half-tender, juicy, very rich and luscious. Early in July.

Flanders. See *Cluster*.

FLEMISH.—Pomologists have fallen into great mistakes with regard to this cherry, particularly those who make it synonymous with *Gros Gobet*; others think it the same as the *Kentish*. The latter is nearer the truth; but the *Kentish* and *Flemish* are decidedly different. The fruit of the two could not be distinguished the one from the other; but the trees of the *Flemish* are less drooping than those of the *Kentish*, and the fruit is smaller, and about eight or ten days later. Anyone who examines the two varieties as they are grown in the *Kentish* orchards will see at once that the varieties are different.

FLORENCE (*Knevett's Late Bigarreau*).—Large and obtuse heart-shaped. Skin pale amber, marbled with red, and mottled with bright red where exposed. Stalk two inches long, slender, deeply set. Flesh yellowish, firm, very juicy, sweet, and rich. Beginning and middle of August.

Four-to-the-Pound. See *Tobacco-Leaved*.

Fraser's Black Tartarian. See *Black Tartarian*.

Fraser's White Tartarian. See *White Tartarian*.

Fraser's White Transparent. See *White Tartarian*.

GASCOIGNE'S HEART (*Bleeding Heart*; *Herefordshire Heart*; *Red Heart*).—Above medium size, heart-shaped, broad at the stalk, and terminating at the apex in an acute, swollen point. Skin entirely covered with bright red. Stalk two inches long, slender. Flesh yellowish white, half-tender, juicy, and sweet. Beginning and middle of July.

German May Duke. See *Early Purple Gean*.

Gobet à Courte Queue. See *Gros Gobet*.

GOVERNOR WOOD.—Large, obtuse heart-shaped. Skin pale yellow, washed and mottled with bright red. Stalk an inch and a half long. Flesh half-tender, juicy, sweet, and very richly flavoured. Beginning of July.

(To be continued.)

QUERIES AND ANSWERS.

MANURING AND PRUNING OF ROSES.

“Should manure be put round the roots of Roses now, or in the spring? Is anything to be gained by pruning Rose trees in the autumn? Some books advocate this plan, on the ground that no sap is wasted upon the wood which must eventually be cut away. Certainly, the buds at the extremities of the shoots appear the finest. I have, however, a fancy, and rather more than a fancy, that this checks the winter growth of the roots, and thus weakens the plant. Is this so?”—A DEVONSHIRE SUBSCRIBER.

[Put the manure to your Roses without further delay. As we know you to be a good practical amateur, before replying to your question about pruning Roses, we would ask, whether anything, in your opinion, is to be gained by pruning old, and half-decayed, or half-worn out, Apple trees, in Devonshire, in the autumn? Is anything gained by pruning Cherries, and all stone fruit trees, without exception, in the autumn—that is, as far as pruning can be effected in the apparent absence of flower-buds? And is it better to cut down coppice in your climate at the fall of the leaf, or late in the spring? You will probably say, that when increased strength, or increased health is required, both are gained, as far as pruning can gain them, by pruning in the autumn. Roses and all other deciduous plants may be a little

checked in growth for two or three months, but not longer, by being pruned very late in the spring; but it is radically bad practice. Pruning in any shape, or at any season, should never be resorted to as a means of checking over-growth, because the effects of pruning, in the long run, go exactly on the opposite track—namely, to increase the vigour of a plant. Roses, which are just as good, as healthy, and as strong as is required, should be pruned in February; but there is not one Rose in a hundred which is in such good condition, and all those which are not, "gain everything" by being pruned from the middle of October to the end of November, according to their strength, beginning with the weakest. It must be "fancy," as you say, to believe, or suppose, that autumn pruning stops, or in any way checks, the winter growth of roots. Take two plants of any kind in your garden, from a Currant to a Peach, or an Oak; transplant them, or put them in by the heels in October; let one of them be pruned like a new Rose to the last three or four buds,—or, if a tree, to the shape of a pollard,—and let the other go in with all its growth untouched. Take both up at the beginning of March, and, if they were of equal strength of root, the new roots on the pruned will be just as long, as strong, and as numerous, as those on the unpruned, and, in nine cases out of ten, more so. We have seen this tested a score of times, and we tested it ourselves, and recorded the test as late as last year. Another exceedingly bad practice is, to remove, in winter or spring, such Roses as were only budded the preceding summer: that, and the supposed strength of the young heads which started from buds as late as July, have been the ruin of ten thousand Roses on the Dog Rose stock. These young heads on old shoulders have not one-tenth of the vigour necessary to draw out the stock, so it grows the wrong way, and there is no way then of righting it.]

DIGGING AMONGST STRAWBERRIES.

A correspondent (*J. Y.*) inquires, if there be any harm in this?—to which a sort of qualified answer must be given. In moist soils, where the roots are near the surface, digging amongst them is nearly as barbarous as digging amongst Rhododendrons, where they are closely packed together in a bed; but where Strawberries are grown in light soil, and in rows from two and a half to three feet apart, there is space for a slight stirring of the soil—say, three inches deep or so. But even then, this stirring, or digging, if it must be so called, ought only to be done to cover any manure that may be put on, or it may be done for appearance. As there is a great temptation to give the Strawberry quarter some sort of dressing in the autumn, this slight picking up with a spud, or fork, will be better than digging. But in some districts, where the top soil is shallow, and the ground and climate moist, the plants usually throw out roots near the surface, in which case no digging or spudding over ought ever to be attempted. If it be necessary to give it a freshened appearance, a sprinkling of fresh soil may be thrown over the ground in autumn, after all runners and weeds have been cleared away. As our correspondent says his soil is light, we can only advise him to deepen it by trenching, or adding soil of a stiffer kind; and by adopting the other modes of culture mentioned in these pages, not forgetting to give his plants plenty of room, it is likely he will succeed hereafter.

TRANSPLANTING EVERGREENS.

IT has been truly said by the wisest of men, that "there is a time for everything under the sun." The validity of this aphorism has never been questioned, only it remains for us to determine when the "proper time" is, for the manifold objects which wealth and a high state of civilisation have rendered necessary to be done. Long-continued practice, varied by sundry experiments, has decided, in a great measure, when it is the best time to sow and plant the important crops which form the staple of our existence. And many things, which in like manner tend to gratify our tastes and pleasures, have become so well known, that their culture has worked itself into a system which it would be difficult to improve to any great extent. Nevertheless, there are some duties, or undertakings, upon which public opinion is so much divided, that it cannot yet be said that we have all discovered when is the right time to do it. Of this kind is the one which forms the leading subject of this article,—the transplanting of evergreens. And even if I were asked when the best time

was, I should have to qualify the answer in such a way, as to give considerable scope to the operator. The subject being of so comprehensive a nature, that it would, perhaps, be better to give some of its parts in detail,—I will begin with one of the most common of shrubs,

THE COMMON LAUREL.—This very useful and ornamental shrub adapts itself to all soils and situations, but seems to prefer a dry, stony soil, in which chalk rather than iron prevails. It transplants with more ease than most shrubs, but almost invariably looks badly for the first year, after which—if the soil be suitable—it progresses rapidly, and is so convenient and hardy, that it may be removed at almost any time. I think I have removed and planted common Laurels every month in the year, and have generally found May about the best, and March the worst month: the cold, withering winds at the latter month are more hurtful than even a Midsummer's sun. But it would be better to avoid June and July, if other months would do. Perhaps May and September may be regarded the best, the weather at the time, and nature of the soil they have to be planted in, having much to do with their well-being. But, if the soil should be dry at either of these times, a good watering at the time of planting will be of great service; and showery weather—especially in May—will be also beneficial. In September this is partly substituted by the long nights and heavy dews; for, be it remembered, the foliage of an evergreen—tree or shrub—requires feeding as well as its roots.

HOLLY.—This tree, though much hardier than the common Laurel, certainly does not transplant so well. But May and September may also be regarded the best months for this, the former month especially being said to be the most propitious. Much of the success of Holly planting depends, like that of most other things, on the condition of the plant to be moved. Plants self-sown, and grown in a wood, transplant badly, when about three feet high. A stiff soil, or one that contains iron in greater or less quantity, is the best for the Holly; and very dry or chalky soils the most unsuitable. Plants from a nursery, that have not stood too long in one place, are best to remove.

BOX.—To a common observer, the closely-matted condition of the roots of this plant imply it to be of easy removal, and with certain success. But this is not always the case, for, though the manipulation be easily accomplished, and the plant, apparently, takes no harm for some time, it does not always flourish. Common and almost universal as this plant is, it will not grow on every soil. I have seen a nobleman's garden where they substituted Oak planks for Box edgings, owing to the latter not thriving; and even at this place it is far from healthy, large patches dying off, even without any cutting at all; and other places are the same. Generally speaking, Holly and Box thrive on the same soils; but the larger variety, or Tree Box, will do on a much lighter soil than the dwarf kind. And it is even possible that such a soil suits it best, for we all know, that, although the stocks of Apples may be all alike, certain soils suit certain kinds better than others do; and the same may be said of Box. I have seen Box edging of so dwarf a kind, as not to require clipping for three or four years, and yet remain healthy; and why not also require a different soil. But a stiff soil suits Box best, and it transplants pretty well any month, except when just in the midst of its growth, and even then a little care will secure its success.

PORTUGAL LAUREL.—This is, unquestionably, one of the worst shrubs to plant and do well. Allied, in a certain degree, to the stone fruits, which dislike mutilations at either top or root, and with the disadvantage of being an evergreen with a large foliage to support, the Portugal Laurel has always been a difficult plant to deal with. But when once established, and in good health, no plant looks better; and by taking proper care at planting time, there may be a greater certainty of the plant doing well than is usually the case. From repeated trials, I have found the roots to be in the most active condition in September, the copious dews at that season being also favourable to the healthy maintenance of the foliage. That month may be regarded as the best for planting this shrub. But what I regard as the principal feature of success, is, the proper way of taking the plant up, a ball not being of so much consequence here as the whole of the roots uninjured by the process. A ball may be of service to a Rhododendron or a Box; but to a Portugal or common Laurel, Holly, or in fact most other shrubs, whose roots consist of a quantity of thick, fleshy stems, running to a considerable distance from the collar of the plant, and with but a sparing supply of fibres attached to them,—such roots ought

to be carefully taken up with the least possible mutilation; and, in planting, care must also be taken to keep each fibre apart as much as possible; and, if the ground be dry, let them be watered, and success is more certain than if the roots of a large plant were all cut off, so as to leave a ball of earth less, probably, than a yard in diameter. In fact, it is the taking up of a plant, as well as its planting, that ensures its welfare; and if all the unfortunate cases were inquired into, it would often be seen that these points had been imperfectly attended to; for, though the proper time for planting be an important thing to ultimate success, taking up and planting the tree is equally, if not more so; and whether the plant operated on be a Daisy or an Oak, the more perfect its roots be at the time of removal, the greater the success; and when valuable or ornamental plants have to be dealt with, assuredly a little extra labour may be bestowed on them.—J. ROBSON.

(To be continued.)

THE ENTOMOLOGICAL SOCIETY'S MEETING.

THE December Meeting of the ENTOMOLOGICAL SOCIETY was held on the 6th inst., the chair being occupied by the President, Dr. J. E. Gray, F.R.S., &c. Amongst the donations announced were—the publications of the Moscow Natural History Society, the Linnean Society, the Dublin Zoological Association, the Society of Arts, and a Memoir on *Scolia*, by M. De Saussure, the grandson of the celebrated Swiss philosopher, of the same name, who was the first to ascend Mont Blanc.

Mr. Frederick Bond exhibited a remarkable monstrosity, occurring on a specimen of the Death's-head Hawk Moth, the wings on the right side of which were deformed, and the veins singularly displaced. Also, a specimen of *Mythimnaturca*, one of the *Noctuidæ*, set with the back downwards, in order to display the curious structure of the legs of the male.

Mr. Samuel Stevens exhibited various rare Lepidopterous and Coleopterous insects, recently sent home, by Mr. Foxcroft, from Sierra Leone, including the beautiful *Lamia angulator*, *Tragocephala pulchella*, some fine species of Charaxes, &c. Likewise, a number of minute Beetles, of various families, recently captured in Celebes by Mr. Wallace, including a number of *Staphylinidae*, which he had found, contrary to the generally-received opinion, as plentiful in that tropical region as in our own country.

Dr. Wallace exhibited some new and very rare British Moths, captured during the past summer, including—*Laphygma exigua*, taken both in July and September, flying by night to the light, and running about very rapidly, in the same manner as *Agrotis exclamatoris*, *Micra ostrina*, *Catephia alchymista*; a species new to England, found in the Isle of Wight, in September, the rare *Acontia luctuosa*; the three previously-known species of *Nola*, together with *N. centonalis*, new to this country, taken in the Isle of Wight, in July.

Mr. Frederick Smith exhibited some galls, found on the leaves of the Beech, formed by a species of *Cecidomyia*, and which had not previously been observed in this country, but which Mr. F. Walker had identified with a species lately found by Dr. Ezra Downes, at Fontainebleau. He also exhibited a specimen of the worker of *Ponera contracta*, a rare British species of Ant, which had been taken, running actively about in a bakehouse, by Mr. Squier.

Mr. Westwood exhibited a large specimen of the Indian *Solpuga*, a gigantic species of spider of great voracity, which had been captured by Mr. Albert Waghorn, who had observed that it devoured not fewer than seven wasps in one evening. Also, the larva of a minute Lepidopterous insect, which had done much mischief in the library of a friend, by gnawing the leather binding of many volumes. Mr. Stainton suggested that it was one of the *Tineidae* (*Endrosis fenestrella*) which had committed the damage in question.

A number of specimens of the curious jumping seeds, from Mexico, were placed on the table, for distribution among the members, the motion of which has at length been ascertained to be occasioned by the seed containing the caterpillar of a small moth, belonging to the family *Tortricidae*.

Mr. G. R. Waterhouse read an extensive memoir on the nomenclature of the British species of the family *Elateridae*, or Click Beetles, in order to harmonise the Stephensonian nomenclature with that adopted by Continental entomologists.

Mr. Stainton read the descriptions of twenty-five species of *Micro-Lepidoptera*, the transformations of which had been ob-

served, in India, by Mr. Atkinson. The larvae of many of the little moths had been found to be identical with those of our own country, the caterpillars feeding within the leaves of various plants. Two or three of the species would, however, require new genera for their reception.

A letter was read from Mr. Bates, giving an account of the habits of various Brazilian insects, and describing a remarkable instance of the destruction of myriads of insects of different kinds, which were found dead or dying, after a storm, on the borders of a lake, and which, when covered with repeated layers of sands, would doubtless hereafter afford a similar instance to the deposits of insects, in the lias and other formations, which have so much attracted the attention of geologists.

HOW TO USE FALLEN LEAVES.

ALTHOUGH all good gardeners know the value and importance of leaves, yet I have frequently seen them wheeled to the rubbish-heap, or some out-of-the-way place, as if they were of no use after they were swept up. When I came to my present situation there was not a shovelful of leaf mould to be had. My practice is, to have a trench dug about a foot and a half deep, four feet and a half wide, and any convenient length—say, about sixty feet long, into which all the leaves are wheeled as they are got up. I then mark off about seven feet for a Mushroom bed, and put two or three inches of horse droppings on it, then spawn, and earth over in the usual way. If I have a spare frame, I put that over it; if not, I cover up thick with litter. Next, I take the length of a small frame for forcing Rhubarb and Sea-kale; next follows a bed of Radishes and early Potatoes; then another of early Carrots; after that, space is left to raise the main crop of Celery, sweet herbs, Asters, Balsams, &c., to plant out on the borders. The ridge in summer is occupied with ridge Cucumbers and Vegetable Marrows, and by the end of October I have a fine stock of leaf mould.—PRACTICUS.

JEALOUSY OF THE ROBIN.

THE tale of our Robin in this garden having been responded to by one similar, in your number of October 19th, I write to give further account of "this curiouish sort of bird," as the gardener is pleased to denominate it.

One day, after the usual salute of taking a bit of bread from the lips of his young mistress, a favourite Canary, in a cage, was introduced, and caressed in the path, before the Robin, when, after two or three hops round the cage, and a chirp or two, he fluttered his wings, apparently angry, and flew away; nor has he ever from that moment approached his fair friend, except by alighting on her window-sill; nor has any inducement brought him back to his original familiarity;—thus displaying something more than instinct, amounting almost to jealousy, at the appearance of a rival, very much to the disappointment and vexation of us all.—ALBERT E. RATCLIFF, *The Laurels, Clewer, Windsor.*

VEGETABLE CULTURE AND COOKERY.

(Continued from page 203.)

CRESS.

THE Plain, the Curled, and the Golden, or Normandy, are all, to a greater or less extent, cultivated in British gardens. The first is that which is used in small salads along with Mustard or Rape. The Curled and Golden Cress are sown in the open ground, and not cut like the small salad Cress, when in the seed-leaf, but allowed to stand till it has made a growth of about two inches high, when it is cut over for use. It will then shoot up again, furnishing a second supply from the same roots.

The true Curled Leaf, when genuine, makes an excellent and very beautiful garnish. It is sown for a first crop in the end of March, broadcast, in a warm, sheltered situation, the soil being made fine and mellow; and when the plants are above ground, they are to be hooped over, and shaded from the sun, and abundantly supplied with water, to make them grow quickly and tender. This is more pungent than the common plain-leaved variety, as used in small salads; but the Golden, which is cultivated in the same way, is more delicate in its growth, and

milder in flavour. For succession crops, a sowing should be made every month or six weeks.

CRESS SAUCE.—Pick a large handful of Cress leaves, and wash them very clean. Put a tea-spoonful of salt into half a pint of boiling water; boil the Cress in this about ten minutes. Drain it on a sieve, mince it quite fine, and then bruise it to a pulp. Put it into a sauce-boat, and mix with it, by degrees, about half a pint of good melted butter, into which there has not been too much flour put, as the Cress will add to its thickness. Serve in a boat. This is a delicate and elegant relish.

CRESS VINEGAR.—Dry and pound half an ounce of Cress seed, pour it upon a quart of the best vinegar, and let it steep ten days, shaking it every day. Strain the vinegar from the seeds, and bottle it. This is an excellent flavourer for salads and cold meat, and is always at hand.

CRESS, AMERICAN.

This—also called *Belleisle Cress* and *Winter Cress*—is used in salads, and in the same way as Water Cress; but it is much more pungent, though similar to it in flavour. It may be sown in April or May, either broadcast or in rows, and thinned out, when the plants have attained three inches high, to six inches distance from each other. To stand the winter, and furnish a winter salad, it should be sown in September, and thinned sufficiently for the lower leaves to develop themselves; but during the season it will require a slight protection.—ROGER ASHPOLE.

TO CORRESPONDENTS.

ROSES ON THEIR OWN ROOTS (*A Subscriber for some Years*).—There can be no reasonable or practical objection to having every kind of Rose in cultivation on its own roots. All the most tender in constitution, and the most delicate in growth and strength, we grow most successfully on their own roots; but in some bad soils certain wild Roses, and half-civilised Roses, as it were, grow better than the full cultivated kinds. Therefore, on these soils, all moderate-growing Roses do better on the roots of the wildlings. A yellow perpetual Rose has been asked for a thousand times, and such a Rose would bring a fortune to a Rose breeder. Yet no breeder has yet found out how to breed a perpetual yellow Rose. But there are yellow Noisettes, Chinas, or Teas, and with them we must be content till some one finds out how to breed yellow perennials. A deep crimson evergreen perpetual Rose is much needed.

VARIEGATED PLANTS (*M. F.*).—We have filed your letter about variegated plants, along with others on that subject; and when we have filed all that is required to be known about them, we shall give a bumper concerning them. But how variegated plants can “be evergreens to enliven the greenhouse in winter,” is more than we shall engage to explain.

BELLADONNAS (*M. F.*).—June is the right time to remove these beautiful bulbs. But unless one is quite superior to the general run of fair, good gardeners, in practice, he will do no good with Belladonnas in pots. Perhaps there are not five gardeners in Ireland and Scotland who could grow them in pots worth looking at, and we are all but certain there are not ten gardeners in England who can grow them better. Mr. Mallison, of Claremont, is the best grower of them in England, most certainly, but he only draws in his shoulders when one asks him about them in pots. No. 32, upright, is the best sized pot for one Belladonna; and pure, unadulterated loam, rather strong than sandy, is the best soil for them.

CLOTH OR GOLD ROSE (*M. F.*).—A plant of this, four feet long, and destined to cover the front of a house, ought to be cut back to the four last buds about the end of March; and if the four eyes will start, the shoots from them should be stopped at the end of June, so as to give twelve shoots in the whole.

POST-OFFICE ORDERS (*P. Ricaut*).—Make them payable to Robert Hogg, Esq., General Post-office, London.

STAGES AT MESSRS. LOWS' (*A Subscriber from the First*).—Mr. Beaton says he saw no raised stages at the Clapton Nursery, and never wrote a word on that subject, as far as he recollects.

CLUB ROOT (*An Old Subscriber*).—We have no experience as to the effect of gas lime in preventing this disease, and shall be obliged by information on the subject. Merely trenching was not likely to prevent the disease. The staple of your soil, probably, requires to be improved.

SUTTON'S CATALOGUE.—When we spoke of the plants in this Catalogue, we should have said *kitchen garden plants*.

WORK ON FERNS (*W. E.*).—We do not know of any book of a reasonable price giving a description of each species of stove, greenhouse, and hardy Ferns, except Swartz's “*Synopsis Filicium*.” It is in Latin. If a synopsis, with the characters of the genera, and an enumeration of the species, synomyms, &c., will suffice, we can recommend to you Mr. Moore's “*Index Filicum*,” now publishing in one shilling Parts. Six Parts are published. It is in English.

NAMES OF PLANTS (*W. Gater*).—Your Ferns, we believe, are as follows:—1. *Gymnogramma tartarea*, 2, 3, and 4. Appear to us to be varied forms of the *Gymnogramma ochracea*, sometimes called *G. Massoni*. We cannot discern any specific difference in them from the specimens sent. 5. Appears to be a small specimen of the *Gymnogramma calomelanos*, sometimes called *G. Peruviana*, also by some called *Gymnogramma onychiphyllo*. 6. *Adiantum capillus Veneris*. 7. *Platyloma rotundifolia*. 8. *Polystichum aculeatum*. 9. Is a varied form of *Lastrea filix-mas*. 10. Is a true form of the same, *L. filix-mas*. The small-leaved plant we believe to be the little Artillery Plant, *Pilea muscosa*.

NAME OF APPLE (*Wenbury Manor*).—The Apple came by post, and was smashed by the post-office stamping.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton. Entries close December 11th.

JANUARY 18th, 19th, and 20th. CHESTERFIELD AND SCARSDALE. Secs., W. M. Hewitt, and J. Charlesworth. Entries close January 4th.

JANUARY 20th and 21st, 1859. LIVERPOOL.

JANUARY 28th and 29th. BOLTON POULTRY, PIGEON AND CANARY SHOW. Secs. Wm. Chester and Robert Greenhalgh, Bolton. Entries close January 15th.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Pitman, Esq.

N.B.—Secretaries will oblige us by sending early copies of their lists.

THE YEAR PAST AND PRESENT.

THIS is our first Number in the year 1859. There is a feeling of buoyancy and freshness which belongs to a new year alone. The trials of the departed are over; its ordeals are passed; its disappointments bid fair to be forgotten; and, with the wisdom gleaned from them, we start afresh, promising to avoid the shoals and quicksands which have threatened often, and sometimes put us in danger. But the past has not been alone a period of trial—it has been fraught with blessings also; and among them, one of the principal is, that we, who have been often permitted to do it, now again wish those who have been similarly favoured “A happy New Year!” In our position as writer, we wish it heartily to our friends, readers, and subscribers; and, while we gratefully record that the past period has been both prosperous and pleasant to us, we look forward with confidence to the future, believing we are justified in assuming that a continuance in the line of conduct we have hitherto pursued will ensure us that support which is at once our pleasure and reward.

It is always an unpleasant thing to speak of self, and, joyfully dismissing the subject, we now begin our poultry review of the past year.

Some old Shows have died—some new ones have sprung into existence. The north and north-western parts of England are full of vitality; the south and south-western are at a low ebb. We, however, hear of preparations for re-opening the campaign in those parts. That which has caused the greatest sensation has been the abandonment of poultry by the Royal Agricultural Society of England. No one can tell why it is done. No one seeks to deny that it paid well. Hundreds were rejoiced when it was first made part of the Exhibition: the same grieved when it was withdrawn. Some were bold enough to ask *why* it was given up. We have never heard the answer. Perhaps there was none. It was an innovation, and as bad as railways, the electric telegraph, and all those new-fangled notions. Comfortable thing a good four-inside post coach, eight miles an hour, and time for a cosy cup of tea while they changed horses!

Our ancient friend in Bingley Hall, the good old Birmingham, has held another successful Exhibition, with such a display as has never before been witnessed. The energy and the good management of the Council of this Society deserves all the success it meets with. The Crystal Palace is becoming more popular after each Show, and, feeling its strength, has modelled the list, to be competed for next week, after that of the Midland Counties, with trifling exceptions. Liverpool remains the exclusive small Show—the gathering of the *élite*. The novelty introduced last year, of a sweepstakes for 100 cocks, at £1 each, was very successful; and the intrinsically valuable pieces of plate given as the prizes were really works of art. Preston remains a great and successful Show. We are happy to say many others do the same. A great improvement has taken place in allowing prize-takers to select any articles of plate to the value of their winnings. Many were formerly tired of cups; and this new arrangement addresses itself more particularly to the ladies, who can now choose at will. This will ensure us their good word. Most of the Committees who have worked during the past year have either been composed of old members, or have had experienced men among them, who knew the routine and duties of the office;

we have, consequently, with a rare exception, had no complaints of delay in returning birds, or mismanagement, during Shows ; in fact, we believe these pleasant gatherings are now firmly established and thoroughly understood. The result has been, we have had harmony throughout the year ; and long, say we, may it continue. We will now glance at the different classes, noting whatever may appear worthy of comment.

Dorkings.—The increase of size has continued, and no more valuable property has been sacrificed to accomplish it. The year may be noted as having shown fewer double or rose-comb birds than any other : we believe we are correct in saying, that there was not a pen at Birmingham. The large entries in this class call for a more liberal prize list, and these also contribute more than any other to swell the amount of sales.

Spanish have improved in quality, but have rather decreased in value. They can well afford this, as, for some time, they were too dear. The prizes for these birds have been more scattered this year than they ever were ; and we are glad to see good birds so disseminated—it is the assurance of numerous entries and strong competition for 1859.

Cochins have made a plain movement towards their original excellence. The adult birds at Birmingham were of a very high character. The Grouse and Partridge birds have formed numerous and good classes. The White have been very moderate, both in quality and numbers ; even in Worcester, their original head-quarters, they mustered feebly. The Blacks have almost disappeared.

Brahma Pootras have certainly made progress, and we think none will deny, that these birds showed better classes at Birmingham, and the Crystal Palace, than they have ever before done. There yet remain some unbelievers in their purity, but they are confined to those who have never bred them.

Polands are good in quality, and much has been accomplished by their breeders. There were signs of more life in exhibitors of these birds at Birmingham ; but at previous Shows the entries have been so small, that Committees have felt obliged to diminish the prizes offered. We think the Black, with white tops, have been better this year than we have ever seen them.

The *Hamburgs* have gone on improving, and are fast attaining what we have long considered a very high standard of merit. It may almost be doubted whether they can be made much better, as for every new excellence required an old one seems to be sacrificed. The Golden, both Pencilled and Spangled, have especially deserved most favourable notice.

Game Fowls are perfect. But there is a manifest falling off in the Duckwings : neither in numbers nor beauty of plumage are they as good as they used to be. This is, in many respects, to be regretted. The Blacks and the Brown-breasted Reds are the favourites. The different classes of this popular breed have been among the most numerous at every Show.

Malays make small entries everywhere, except at the Crystal Palace. The only reason we can assign for their losing ground, which they once held in public estimation, is, that, whereas they were formerly the only birds that could be kept in health in close confinement, it is now well ascertained that both Cochins and Spanish possess that valuable property, and are far more saleable. The cause of their numbers at the Crystal Palace probably is, that they are still kept around the East India Docks, and in that neighbourhood, where they are landed from the Indian ships.

The *Various Class* has everywhere been small, and contained only useful specimens. We have been glad to see, that the ridiculous creatures formerly sought in order to exhibit are out of fashion.

Sebright Bantams have shown badly everywhere, except at Birmingham. There were some good Gold birds there. The real Silvers appear to be lost. The Black and Whites have been good, especially the former ; but the chief interest in these classes is centred in the Game. Here, the advance in merit is very great, and we expect that at Shows in 1859 they will form a numerous class.

Little need be said of *Geese*. They maintain their size, but there has been no advance during the year.

Aylesbury Ducks have, we think, improved in frame and size, although they have not been so heavy as we have had them in former years. Judges have been obliged to exercise discretion and knowledge in choosing between size and mere weight, the result of fat, in this and many other classes.

Rouens have made a remarkable advance in size, numbers, and feather. Those who were interested in it, will not easily forget this class in Bingley Hall.

Turkeys have been good everywhere ; and, while the Cambridge have the palm for size, the Americans are always chosen for beauty and symmetry.

The above is the result of our observations of the Shows in England. We have no means of speaking of the quality of birds shown in Ireland and Scotland ; but we hear favourable accounts of the increase of Exhibitions, and improvement in the poultry. We have heard, that in the latter country, they consider their Dorkings and Cochins superior to ours. We should be glad to see them in the lists. There is a growing disposition to enter into sweepstakes in some classes, and this may, perhaps, tempt some to become exhibitors, as a small prize may not appear worth the trouble of sending so far. In Canada and New South Wales, Shows are being regularly organised, and we have seen some of the prize lists. At Melbourne (Australia), there is a great demand for fancy poultry, and at large prices.

Such is our review, so far as birds and their contests are concerned. We are truly happy to say, that 1858 has been a harmonious year among all classes of amateurs. There have been, and there always will be, some differences of opinion, but there has been nothing beyond that. We rejoice at it. Loving the pursuit, and believing implicitly, not only in its usefulness, but in its improving and humanising tendency, we are glad of every indication of its prosperity and increase. We write cheerfully on the subject, as our feelings induce us to do so. With thanks, then, for the past, and with glowing anticipations for the future, we heartily salute our readers, in this our first Number in 1859, and wish them "A HAPPY NEW YEAR!"—B.

BURNLEY POULTRY SHOW.

THIS was held December 28th. Judges :—Mr. T. Challoner, Whitwell ; and Mr. Tegetmeier, London. The following were their awards :—

SPANISH.—First, J. K. Fowler, Aylesbury. Second, T. Robinson, The Gill, Ulverstone. Highly Commended, J. H. Craigie, Woodlands, Chigwell, Essex.

DORKINGS.—First, Capt. W. W. Hornby, R.N., Prescot. Second, J. Robinson, Vale House, Garstang. Highly Commended, W. Holden, Heysham Tower, Lancaster. Commended, C. H. Wakefield, Malvern Wells.

COCHINS.—First, T. Stretch, Bootle, near Liverpool. Second, J. K. Fowler, Aylesbury. Highly Commended, T. H. Barker, Hovingham ; H. P. Watson, Preston. Commended, A. F. Watkin, Walkley, Sheffield.

COCHINS (Partridge).—First, J. Cattell, Birmingham. Second, Miss V. W. Musgrave, Aughton, Liverpool. Commended, H. Churchill, Gloucester.

BRAHMAS.—First and Second, R. Teebay, Preston. Commended, P. Catterall, jun., Preston.

GAME (Black-breasted and other Reds).—First, W. Dawson, Selly Oak, Birmingham. Second, Capt. W. W. Hornby, R.N., Prescot. Highly Commended, H. W. Julian, Beverley ; A. Sutherland, Burnley ; T. Robinson, Ulverstone ; R. Swift, Southwell ; H. Adams, Beverley ; H. Broughton, Harpers ; D. Parsons, Cuerden, Preston. Commended, R. Whittam, near Burnley. (A remarkably good class.)

GAME (Duckwings and other Greys and Blues).—First, A. Sutherland, Burnley. Second, H. Adams, Beverley. Highly Commended, W. Jagger, Halifax ; Haigh and Hartley, Holmfirth ; J. Dixon, Bradford ; J. Cowgill, Thornton, near Skipton ; G. Robinson, Thorp Hall, Worksop. Commended, R. Barnes, Burnley ; R. Dickenson, Burnley.

GAME (White and Piles).—First, G. Robinson, Thorp Hall, Worksop. Second, N. Grimshawe, Bank House, near Burnley. Highly Commended, R. Sabin, Birmingham. Commended, H. Adams, Beverley.

GAME (any other variety).—First J. Brown, Preston. Second, W. Dawson, Selly Oak, Birmingham. Highly Commended, J. N. Coulthurst, Gargrave ; Bullock and Rapson, Leamington ; W. Thornber, near Cirencester.

BEST GAME COCK.—First, E. Archer, Malvern. Second, R. Swift, Southwell. Third, W. H. Fox, Horton, Bradford. Highly Commended, T. Evinson, Chesterfield ; R. Perry, Kirklington, Southwell ; Capt. W. W. Hornby, R.N., Prescot ; H. Adams, Beverley ; T. Proctor, Settle ; G. Holgate, Burnley ; W. Dawson, Birmingham ; J. Maudsley, Hornby ; H. Turney, Burnley. Commended, R. Swift ; A. Sutherland, Burnley ; W. Moorehouse, Read ; G. Holgate. (An extraordinary class.)

HAMBURGS (Golden-pencilled).—First, W. C. Worrall, Liverpool. Second, Carter and Gaultier, Poulton-le-Fylde. Highly Commended, C. R. Titterton, Birmingham ; J. Martin, Claines, Worcester. Commended, J. Dixon, Bradford ; J. Munn, Stacksteads, Manchester.

HAMBURGS (Silver-pencilled).—First, E. Archer, Malvern. Second, W. Maud, Bingley. Commended, J. Dixon, Bradford.

HAMBURGS (Golden-spangled).—First, T. Hartley, Earby, Skipton. Second, W. Chester, Horwich. Highly Commended, S. H. Hyde, Ashton-under-Lyne ; J. K. Bartrum, Bath. Commended, B. L. Sykes, Poulton-le-Fylde ; H. Carter, Holmfirth.

HAMBURGS (Silver-spangled).—First, J. Dixon, Bradford. Second, J. Robinson, Garstang. Highly Commended, R. Teebay, Preston ; H. Carter, Holmfirth ; Mrs. Bauser, Southwell.

POLANDS (any variety).—First, J. Dixon, Bradford (Golden-spangled). Second, P. H. Jones, Fulham (Silver-spangled). Highly Commended, J. Dixon (White-crested Black).

ANY OTHER DISTINCT BREED.—Prize, W. Dawson, Hopton, Mirfield (Sultans). Prize, C. R. Titterton, Birmingham (White Cochins). Prize, J. Dixon, Bradford (Malays). Prize, J. Scott, Skipton (Black Hamburgs). Highly Commended, Mrs. Sharp, Bradford (Black Hamburgs). Commended, H. Churchill, Gloucester (White Cochins).

SPANISH CHICKENS.—First, S. H. Hyde, Ashton. Second, Capt. W. W. Hornby, R.N., Prescot. Commended, J. K. Fowler, Aylesbury; P. H. Jones, Fulham; T. Burgess, jun., Burley Dam, Whitechurch.

GAME COCK SWEEPSTAKES.—First, Capt. W. W. Hornby, R.N., Prescot. Second, H. Worrall, Liverpool. Third, E. Archer, Malvern. Highly Commended, R. Swift, Southwell; Capt. W. W. Hornby, R.N.; E. Archer; J. Brown, Preston; A. Sutherland, Burnley; D. Parsons, Cuerden; G. Holgate, Burnley. (A remarkably good class.)

GAME BANTAMS.—First, R. Swift, Southwell (Duckwings). Second, Master Mapplebeck, Birmingham (Duckwings). Highly Commended, T. Evinson, Chesterfield (Black-reds); Haigh and Hartley, Holmfirth (Black-reds); M. Turney, Preston (Brown-reds); D. Parsons, Cuerden (Black-reds).

BANTAMS (any variety).—First, G. Bradwell, Southwell (Blacks). Second, S. Schofield, Heckmondwike (White). Highly Commended, T. H. D. Bayly, Biggleswade (Gold-laced); J. N. Coulthurst, Gargrave (Gold-laced).

DUCKS (Aylesbury).—First, J. K. Fowler, Aylesbury. Second, T. Leigh, Eccles. Highly Commended, J. Weston, Aylesbury; J. Abbott, Kendal; T. Emmett, Preston.

DUCKS (Rouen).—First, Capt. W. W. Hornby, R.N., Prescot. Second, T. Leigh, Eccles. Highly Commended, T. Robinson, Ulverstone; T. Leigh. Commended, E. Waddington, Burnley.

DUCKS (any other variety).—First, J. W. Earle, Prescot (Black). Second, J. Dixon, Bradford (Grey Call). Highly Commended, T. H. D. Bayly, Biggleswade (Grey Call); J. K. Fowler, Aylesbury (Black); D. Parsons, Cuerden, Preston (Grey Call).

PIGEONS.

ALMOND TUMBLERS.—First, G. Morgan, 15, Elton Street, Lower Broughton, Manchester. Second, E. Fielding, Spotland Road, Rochdale. Highly Commended, G. Morgan. (An extraordinary good class.)

TUMBLERS.—First, E. Fielding, Spotland Road, Rochdale (Kites). Second, G. Morgan, 15, Elton Street, Lower Broughton, Manchester (Kites).

CARRIERS.—First, G. Morgan, 15, Elton Street, Lower Broughton, Manchester. Second, J. Percival, Clent Villa, near Birmingham. Highly Commended, G. Morgan.

POWTERS.—First, W. Dawson, Selly Oak, Birmingham. Second, E. A. Lingard, King's Norton, Birmingham.

RUNTS.—First, H. Child, jun., Birmingham. Second, P. H. Jones, High Street, Fulham.

JACOBINS.—First, J. Lawrence, Liverpool. Second, G. Goore, Aigburth, Liverpool.

FANTAILS.—First, T. Lawrence, Liverpool. Second, S. Robson, Pocklington. Highly Commended, H. Child, near Birmingham.

OWLS.—First, E. Worrall, Knotty Ash, near Liverpool. Second, G. Morgan, 15, Elton Street, Lower Broughton, Manchester. Highly Commended, G. Morgan.

TRUMPETERS.—First, J. E. Mapplebeck, Moseley Road, Birmingham. Second, M. Greenwood, Burnley. Highly Commended, P. H. Jones, Fulham.

BARBS.—First, J. T. Lawrence, Liverpool. Second, J. H. Craigie, Woodlands, Chigwell, Essex.

TURBITS.—First, M. Greenwood, Burnley. Second, E. Worrall, Knotty Ash, Liverpool.

NUNS.—First, J. E. Mapplebeck, Birmingham. (Second prize withheld.)

DRAGOONS.—First, J. E. Mapplebeck, Birmingham. Second, J. Brown, Pole Street, Preston. (The greater part of the birds Carrier breed.)

ANY OTHER VARIETIES.—First, E. Worrall, Knotty Ash, Liverpool (Black Magpies). Second, H. Tomlinson, Balsall Heath Road, Birmingham (Meeves). Highly Commended, J. E. Mapplebeck, Birmingham (Black Magpies). Commended, G. Goore, Aigburth Vale, Liverpool (Brunswicks); H. Child, jun., Birmingham (Archangels).

BRAHMA POOTRAS.

IN common with "SALOP," I must confess I was surprised at your "Letter Box," of the 7th ult., and its verdict as to the Brahma fowl. I cannot lay claim to any of the distinguished poultry names mentioned by "SALOP," yet, I think, I have kept them somewhat longer than most of them. In classes for Brahmans, I have only exhibited three times, and on each occasion with success. When I state further, that my original birds were chickens from Garbanati's "challenge birds;" that I have since crossed them with Dr. Gwynne's and Mr. Davies' stock, I think I may claim good blood for them. In THE POULTRY CHRONICLE for 30th May, 1855, I compared them with Cochins, greatly to

the advantage of the Brahma. Both breeds are still kept by me, but each year has strengthened the impression laid down in the remarks above mentioned.

If they are only "a variety" of Cochins, I should, like an Irishman, say, they are such a *distinct variety*, as to have nothing but the feathered leg, its colour, and the colour of the egg in common. Yet these are all points which belong to other breeds, besides these two, yet we do not lump them together.

In the external form of the cocks of either breed, I see a marked difference: the Brahma is always the more lively, and the more pugnacious; while, as regards crowing, and the other attributes of the male bird, he is from two to four months earlier than the Cochins. My cockerels, hatched in April and May, have been crowing six weeks; whilst of two Cochins cockerels, hatched the earlier part of March, one, when killed a week ago, had never crowed, and the other has only just commenced.

As to pullets, seven or eight have laid, and been broody once, and some are laying again; while my Cochins, though older, have been very shy, and did not begin till a month ago. I do not despise the Cochins as an eating bird, but for depth of breast and fulness of meat there, the Brahma surpasses it.

Put a number of chickens of both sorts together. My experience says, you will find these differences in their habits. The Brahmans are the greatest roammers—they are the first out of the house in the morning, the last to roost at night. They fly better than the Cochins, and so require a higher fence; they will trudge about in the snow, where the Cochins will not. When you add to these the marked difference in precocity of both sexes, you will have a fair, and, I believe, a true and faithful list of differences.

I have reared some hundreds, but I never saw a fifth claw among them, until this year, in a cross between Brahma cock and Dorking hen, when, I think, without exception, this tenacious mark of the Dorking showed itself. Surely, had blood of this latter breed been ever in the stock, it could not have escaped observation, and must have showed itself.

Again, if the White Cochins is the parent, should we not oftener have them quite white. This has never been my lot.

My experience also leads me to say, that they lay larger eggs, are less frequently broody, and lay more eggs in the year. Indeed, after keeping both breeds for nearly five years, I have almost made up my mind to discard the Cochins; as my verdict would be, that in hardihood it was equalled, in beauty and more useful points surpassed, by the "variety" so-called, but which I believe to be as distinct as the Game, or any other fowl.

May I refer you to THE POULTRY CHRONICLE for November 1st, 1854. There is a letter there, which, I think, transfers Mr. Hewitt to the Brahma side.

After trespassing so much on your valuable space, I ought, in justice to my Cochins, to state, that they are from Punchards, Gilberts, and Andrews' strains.—J. H.

CRYSTAL PALACE BIRD SHOW.

I HAVE just read Mr. B. P. Brent's remarks in your paper on the above Show, and would feel obliged if he will tell the bird fanciers, who read your journal, where he gets his law, or rule, for asserting that the Belgium Canary should be straight; and that the prize birds at this Show were too much hooped. Were they not the best birds shown?

The Nottingham Exhibition, which I believe is the best in England for Canaries, considers it a very important point to get a bird well filled in the back, and forming a good circle from shoulder to tail; and, I believe, at all Exhibitions of the least importance this point is fully carried out.—THOS. RIDLEY, North Shields.

NOTES ON FANCY POULTRY.

IN THE COTTAGE GARDENER of November 16th, in your remarks on the "Points required in Exhibition Fowls," I find the following:—"In the Grouse and Partridge (Shanghais) be careful that the cock has a perfectly black breast, and that the hens match, having as little tendency to buff on the breast as may be." From this it appears that you consider Grouse and Partridge as synonymous terms, which, however, is not the case, they being distinct varieties, and requiring different cocks to match them correctly. The Partridge-coloured Shanghai hen ought to have

a clear fawn-brown breast, then she will be the natural match for a perfectly black-breasted cock, and will also breed perfectly black-breasted red cocks. The Grouse-coloured Shanghai hen is a much richer shade than the former, and her marking extends to her breast; consequently, her natural match is a streaky, or Pheasant-breasted red cock.

By mixing the two varieties, both the shades of colour may be obtained. But, in the majority of cases, the young will be produced, with the pullets to match their sire, and the cockerels their dams; hence, the frequent complaints of breeders. The Judges, I think, should endeavour to make their awards as rational as possible, and not try to bend nature to their own fancies, for they will assuredly find the natural laws rather difficult to alter.

Last year, the "grumbling" exhibitors complained much, and justly too, that, to satisfy the fancy of the Judges, they were obliged, in the so-called Golden-spangled Hamburgh class, to show Yorkshire Pheasant cocks, or at least half-bred ones, with Mooney hens,—in fact, they were compelled to buy one, or to keep two strains,—as the birds required to please the Judges could not be bred from the same variety. How far that has been remedied this year, I know not; but your remarks on the so-called Silver-spangled, I think, are likely to lead breeders equally astray. At page 109, you say, "And in the Silver, the tails should be clear, and tipped or spangled." This is, then, the tail of the Creel; while further down you say, "The Spangled require more colour in the breast, hackle, and saddle." This, then, is approaching the Mooney marking. The fact is, the Creel is a Silver Pheasant, or spangled fowl, with a light ground and clear hackle; the Mooney, on the contrary, has a dark, or deep, ground, and a striped hackle. Thus, it would be necessary, to produce a fowl deep-grounded in its forepart, and light-grounded in its hinder parts, a feat it will take an immense time to perform; but mark the sequel. In your report of the Birmingham Show (COTTAGE GARDENER, December 7th, page 157), is the following observation:—"The Silver-spangled Hamburghs were very good. Breeders in this class have gained perfect tails,—they are of faultless white, and accurately tipped; but this point is almost counterbalanced by loss of marking, both in quality and regularity, in hackle, body, and breast."—B. P. BRENT.

"THE POULTRY DIARY"—"A DIRECTORY TO THE PRINCIPAL EXHIBITORS OF POULTRY, PIGEONS, AND RABBITS."

THESE very useful publications are edited by Mr. Warwick, and published by him at the *Essex Gazette* office, Colchester.

We have more than once before commended the "Diary," and can only reiterate our entire approval of it. Of the "Directory" we can add, that, besides other information, it contains, not only the direction of each exhibitor, but the kinds of fowl which they exhibited, and the prizes which they gained. This is very valuable to poultry, pigeon, and rabbit fanciers, for it is a guide to whom application ought to be made for any variety needed.

STOCKPORT POULTRY EXHIBITION,

THIS Exhibition was held on the 31st of December, 1858, and 1st of January, 1859. The following is the list of prizes awarded:

SPANISH (Black).—Prize, J. Parsons, Audenshaw. *Chickens*.—First, S. H. Hyde, Ashton-under-Lyne. Second, J. Roycroft, Manchester.

DORKINGS.—Prize, W. Holt, Heaton Norris. *Chickens*.—First, J. Pearson, Audenshaw. Second, G. Potter, Fallowfield.

COCHIN-CHINAS.—Prize, H. N. Harrop, Audenshaw. *Chickens*.—First and Second, H. N. Harrop, Audenshaw.

GAME.—Prize, T. Dodds, Halifax. *Chickens*.—First, J. Berry, Failsworth. Second, T. Butterworth, Rochdale.

HAMBURGS (Golden-pencilled).—Prize, W. M. Lilley, King's Norton. *Chickens*.—First, Mrs. B. Street, Ashton-under-Lyne. Second, J. Chambers, Manchester.

HAMBURGS (Silver-pencilled).—Prize, E. H. Greg, Styall. *Chickens*.—First, E. H. Greg, Styall. Second, J. Ashcroft, Ashton.

HAMBURGS (Golden-spangled).—Prize, W. R. Lane, Birmingham. *Chickens*.—First, J. Andrews, Ashton. Second, S. Harrison, Denton.

HAMBURGS (Silver-spangled).—Prize, J. Andrew, Ashton. *Chickens*.—First, N. Marlor, Denton. Second, J. Andrew, Ashton.

POLANDS.—Prize, N. Marlor, Denton. *Chickens*.—First, N. Marlor, Denton. Second, J. Roycroft, Manchester.

BANTAMS.—Prize, J. Ashcroft, Ashton. *Chickens*.—First, S. H. Hyde, Ashton-under-Lyne. Second, J. C. B. Alexander, Burnage.

BANTAMS (White).—W. M. Lilley, King's Norton. *Chickens*.—First, J. Balinforth, Slaithwaite. Second, A. Simpson, Haughton Green.

ANY OTHER BREED OR CROSS BREED.—Prize, J. Balingforth, Slaithwaite (Black Hamburghs). *Chickens*.—First and Second, S. Fitton, Middleton.

TURKEYS.—First, Duncuft, Norris Bank House. Second, J. Lawton, Portwood.

GESE.—First, C. R. Brady, Cale Green. Second, T. Radcliffe, Saddleworth.

DUCKS (White Aylesbury).—First, E. H. Greg, Styall. Second, J. Burgess, Wilmslow.

DUCKS (Rouen).—First and Second, J. Duncuft, Norris Bank House.

DUCKS (any other variety).—First, E. Sykes, Edgeley House. Second, S. H. Hyde, Moss Cottage.

By order of the Committee, no commendations of any kind were permitted.

JUDGE.—Mr. Edward Hewitt, Eden Cottage, Spark Brook, near Birmingham.

CREWE POULTRY SHOW.

As a mysterious silence is still maintained at Crewe, a reward of many thanks is offered to anyone who can state for what, why, and wherefore, do all letters addressed to the worthy Secretary of the Crewe Poultry Show remain unanswered and unnoticed?

And a further reward of thanks will be given to any person who can show just cause or impediment why the well-earned prizes, and the money for the poultry sold at the said Show, in October, should not have been paid to the lawful claimants at the close of December of the year 1858.

[We have heard from Mr. Rodbard, Mr. Peirce, and others, making complaints of non-payment of the prizes they had awarded to them at Crewe. We can say no more upon the subject, than that no loss either of time or of money would prevent our suing the Secretary, or some other member or members of the Committee, if we were among the wronged. They should be exposed in the County Court, and a full report published in the local newspapers. We cannot understand how any man pretending to common honesty can allow this non-payment, which he guaranteed by allowing his name to be employed as sanctioning the Exhibition.—EDS.]

OUR LETTER BOX.

DISEASED SPANISH FOWLS (H. G.).—Spanish fowls are less subject to roup than any other breed, and, from the symptoms you describe, we do not think your bird is suffering from it. There is no roup without discharge from the nostrils. If there is any horny substance at the tip of the tongue, trim it with a pair of scissars till it bleeds freely; and if there is any formation under the tongue, remove it. Give him castor oil every third day till he is well, a table-spoonful at a time, and if he flags between the doses, give some bread and ale. The points of a white Game fowl are the same as those of any other colour. The legs may be any colour you like, but they must match.

LONDON MARKETS.—JANUARY 3.

POULTRY.

The week following the Christmas market is generally one of scarcity. The country has been ransacked for a month previously, and the senders rest after their exertions. Turkeys sold well, but were deficient in quality as compared with many former years. Granting they are all of first-rate quality, it may be safely said, their price is regulated by their weight, although they are not sold by it.

	Each.		Each.
Cock Turkeys ...	12s. 0d.	to	20s. 0d.
Hen Turkeys.....	7 0	,	9 0
Large Fowls	5 0	,	5 6
Small ditto.....	4 0	,	0 0
Chickens.....	1 9	,	2 9
Geese	7 0	,	7 6
Ducks	2 3	,	2 9
Woodcocks			2s. 6d. to 3s.
Hares		2s. 9d.	to 3s. 0d.
Pheasants		2	6
Partridges		1	3
Snipes		1	0
Pigeons		0	8
Rabbits		1	3
Wild ditto		0	9

WEEKLY CALENDAR.

Day of M'nth	Day of Week	JANUARY 11-17, 1859.	WEATHER NEAR LONDON IN 1858.					Sun Rises.	Sun Sets.	Moon R.ands.	Moon's Age.	Clock afterSun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.							
11	T	Salvia fulgens.	30.424-30.028	50-20	W.	.01	5 af 8	11 af 4	morn.	7	8	8	11
12	W	Scilla tenuifolia.	30.515-30.343	51-37	S.W.	-	4	8	13	4	28 af 0	8	32
13	TH	Primula sinensis.	30.252-30.245	50-21	N.W.	-	4	8	14	4	48	1	54
14	F	Passiflora corulea.	30.333-30.303	47-22	W.	-	3	8	16	4	13	3	10
15	S	Passiflora Colvilli.	30.308-30.286	48-34	W.	-	2	8	17	4	41	4	11
16	SUN	2 SUNDAY AFTER EPIPHANY.	30.553-30.288	50-32	N.W.	-	1	5	19	4	1	6	12
17	M	Sparaxis tricolor.	30.651-30.565	42-24	N.W.	-	0	8	20	4	8	7	13

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 41.8° and 30.8°, respectively. The greatest heat, 56°, occurred on the 15th, in 1852; and the lowest cold, 4°, on the 14th, in 1856. During the period 92 days were fine, and on 104 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

ARTICHOKEs, JERUSALEM.—Dig up, and replant in deeply-dug and well-manured ground.

CAULIFLOWERS.—Give the plants, in pits, frames, or under handlights, plenty of air. Remove dead leaves, and exclude frost.

CUCUMBERS.—If a seed-bed is made with the dung previously well prepared, as advised, it will be ready to receive the seed. After having stood a few days, to allow the rank steam to pass off, a layer of light, sifted soil may then be placed on the surface, to the depth of three or four inches. Sow the seeds in shallow pans, or pots, half filled with leaf mould. After sowing, lay a piece of glass on the top of the pan, or pot, to prevent the mice getting at them.

HORSERADISH.—Trench out, and replant in ground trenched two feet deep, and well manured.

MUSHROOM BEDS, out of doors, will require a thick covering of dry straw, litter, or hay, to protect them from wet. If the covering has become damp, remove it, and replace it with dry. Save horse-droppings for early beds.

ONIONS.—Sow a small patch of the *Two-bladed*, on a warm border, for producing young ones early. They should be sown very thickly, and protected with mats, or litter, if severe weather should set in.

SHALOTS.—Place them on the surface, as the roots soon push into the soil, and get firmly fixed. If planted, and surrounded by soil, they are apt to rot. If worms are troublesome, a slight sprinkling of slaked lime will banish them.

SLOPING BEDS.—It is the practice of many market-gardeners to sow their early seeds on slopes, by throwing the soil—being previously well incorporated with dung—into ridges, to mellow, about five feet apart, and then levelled down into slopes, facing the south, with small alleys between. They are generally made near the frame ground, for the convenience of covering. The system is worthy of adopting in most places.

FRUIT GARDEN.

If the weather continues mild, the planting of fruit trees may still be performed. As light and air are necessary for the healthy growth of vegetables, and as some old gardens are often crowded with fruit trees, it is left to the discretion of the owner to remove some of the trees, for the benefit of the undercrops, or to retain them, and be satisfied with inferior crops of vegetables.

RASPBERRIES.—Prune, stake, and tie. Manure and dig between the rows.

FLOWER GARDEN.

As a return of severe weather, though long delayed, may yet be near, to arrest all progress with the spade, it is advisable to proceed as expeditiously as possible with all alterations that may be in hand, more particularly if they include the removal of trees and shrubs.

ANNUALS (HARDY).—If any beds, or patches, of self-sown, or autumn sown, are now considered worthy of

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the trouble, a few branches of evergreens, stuck in amongst them, will shade them from sunshine after frost, and protect them from drying winds. Plants generally in the open air, this season, are rather tender, and must be watched accordingly.

AURICULAS, being Alpine, and, therefore, of a hardy nature, are apt to suffer from drip and confinement in frames: they should, therefore, receive all the air possible in mild and dry weather. Seed may be sown now, in pots, or pans, and covered very slightly with soil, and watered with a very fine rose watering-pot, and placed in a cold frame. A slight covering of moss will keep the surface damp, and secure from the changes of temperature, but to be removed gradually as the young plants vegetate.

BOX EDGING.—Take up, and relay, if it is patchy, or has grown too high and bulky.

BULBS—such as *Anemones*, *Tulips*, *Hyacinths*, *Narcissi*, &c.—should be planted without delay.

PITS and FRAMES.—Continue to expose the plants freely to the air whenever the weather will permit, to keep them hardy, and to render them less liable to damp off, if frost should set in, when it may be necessary to keep them covered up for some time.

RANUNCULUSES.—Prepare the beds, by trenching up the soil to the depth of two feet, filling in with six inches of rotten cowdung at the bottom. The lower and most hungry portion of the soil should be removed, and its place supplied with equal portions of turf loam and leaf mould, which should be well incorporated, and left in a rough state, until wanted for planting the roots, about the middle of February.

UNFAVOURABLE WEATHER.—When out-door work cannot be performed, stakes may be pointed, labels and brooms made, and many other such things prepared, in readiness for use when wanted.

WALKS.—Turn, and fresh surface. WILLIAM KEANE.

CYCLAMEN COUM AND CYCLAMEN VERNUM.

Is there a man or woman in the three kingdoms, or amongst our own readers in any part of the wide world, who knows *Cyclamen Coum* from *Cyclamen vernum*, or who knows which of them is the one, and which the other? If there is such a person living, I should be very much obliged for the privilege of communicating privately with him, or her. I said, last week, that Cyclamen flowers, chiefly of the *Persicum* race, were becoming fashionable for cut flowers for the hair; and so they are, but it strikes me that we might have other races more hardy, and equally suitable for the hair—quite as lardy as the new race of *Atkinsoni*, and with longer footstalks. I also said, long ago, when Mr. Atkinson's seedlings came out, that I had been crossing some of the kinds from 1832 to 1836, not for garden varieties, however, but for the private satisfaction of a private gentleman, who was an enthusiastic practical botanist, and who had more practical knowledge of all manner of bulbs, from Swedes to Cyclamens, than all our British botanists of that period put together, save Dr. Herbert, late Dean of Manchester.

He studied the Cyclamens in their native wilds, in all parts of the Swiss and Italian Alps, and was a favoured correspondent with the venerable Tenore, the celebrated Italian botanist, who was also, then, the best authority in the world for these Cyclamens.

From about 1818 to 1830, there was a jealous opposition in British botany, or rather among British botanists, and botanical works—a fact which our friend, Dr. Lindley, could vouch for, for he was in the heat of it, and generally in the front of the battle. At that period, there were more wrong names manufactured in England, to serve this opposition, than there ever were before, or since. So that those garden amateurs who, like my employer, had a natural turn for scientific inquiry, and botanical studies, were constantly fretted, and practically hindered, by the very people from whom they ought to expect the greatest help—the authors of, and writers in, botanical works. The rage for species, and specific distinctions, which are now found to be all but useless, and not founded upon nature, was then at its height; and every plant which reproduced itself from seeds was put down as a genuine species, by those wranglers, and by all whom they could influence by their special writings. There were some few, however, who could not be convinced by such speciality without actual and positive proof from nature's own lap; and my life, as a master gardener, began with one of those amateurs who had too much practical knowledge of plants to be led away with baseless theories and false reasonings about species and affinities; and the greatest part of my work, with my own hands, was, to prove which were and which were not natural species, or which of such and such species and genera came nearest to one another, by raising quantities of plain and crossed seedlings every year, without the slightest aim at improving one kind out of a hundred—a thing which would now seem all but madness, when the thing itself is familiar enough.

The Cyclamens were one race out of many which passed through our hands with no more aim than this proving of species; but all that I recollect about them is, that one called *Clusii*, by Dr. Lindley; and another, which was named *repandum*, by Sweet; are both wrong names, for one of the commonest of all the Cyclamens. But whether they were the same as *hederifolium*, I cannot call to mind. I think Tenore wrote that Lindley merely wished to show that Clusius first named that *Cyclamen*; and that Sweet's *repandum* was the same as Sibthorp's something else, in the "Flora Graeca;" and that both were the same as Clusius' Ivy-leaved kind; but that the kind which usually went by the name of Ivy-leaved, or *hederifolium*, was not Clusius' plant. They all come from seeds, and some of them vary exceedingly from seeds, so much so, that, at the time of the rage for species, many of the seedling varieties were named as species. But there has not been a new species of *Cyclamen* discovered since Linnæus' day, or, at all events, since Miller's time. Miller's *hederifolium*, however, is not the same, for Clusius' *hederifolium* flowers in the spring, and Miller's *hederifolium* flowers in the autumn. This *hederifolium* is now called *Europaeum*, by botanists; but, in books and in collections, *hederifolium* is a puzzler to this day; and the way to make the difference reconcileable with cultivated plants, is, to mind that the true *hederifolium* blooms in the spring. Any *Cyclamen* you may be growing under the name of *hederifolium*, or Ivy-leaved, if it does not invariably flower in the spring, is not true. But there are two kinds which bloom in the autumn, and go for Ivy-leaved, or *hederifolium*, and it is not so easy to know them from one another. *Europaeum* is one of them, and the smallest-leaved; and *Neapolitanum* the other, with larger leaves; but, like *Persicum*, it varies very much in the leaf—hardly two of them come up alike.

Coum and *vernus* are just in the same condition as the three kinds of *hederifolium*. The one passes for the other, and the other for that, all over the three kingdoms, so that there is no dependance on getting the one or the other true to name. *Coum* is the most common; or, judging from my

own luck, I should say *vernus* is extremely scarce. I could not pick it up anywhere on the Continent, about 1833; and having taken to the *Cyclamen* since *Atkinsoni* came out, I am no better off; for, send for it where I may, and offer for it what I will, nothing comes to hand but *Coum*, or a seedling which is all but *Coum*. Hence, this call and warning about *Cyclamen*.

Miller says the *Coum* of herbalists is *foliis orbiculatis planis*—that is, with plain, round leaves; *pediculis brevibus floribus minoribus*, with shorter and weaker footstalks to the flowers, than any of the rest; while his *Cyclamen vernum* is *foliis orbiculatis-cordatis*, or with round leaves, heart-shaped at the bottom. The two lobes of the heart overlap each other, with the footstalk in the centre. The underside of the leaf is red, as in *Coum inferne purpurascente*. "This is, at present, rare in England," says Miller; "the leaves of this sort are large (they are double the size of those of *Coum*), orbicular, heart-shaped at the base; the leaves and flowers of this come up from the root at the same time (in November); the flowers are of a purplish colour, and their bottoms are of a deeper red; and it requires protection from the frost in winter." Now, who has this *Cyclamen vernum* to offer for love or money. It used to come into bloom just when the old Chrysanthemums were at their prime; and before *Coum* or any of the *Persicums* were open *vernus* was over for that year. But forced *Persicums* could be had now as early as *vernus*; and *vernus* being the link between the autumn-flowering and the spring-blooming kinds, might not the cross-breeder presume on having *Cyclamen* in bloom from the end of July to the last of the May following, provided that *vernus* is a seeder, and that it would cross with some of the others? That is just the purpose for which I want *vernus*, and I should be most glad to take it either for love or money, if I could but make sure of it.

Mr. Gordon gives another mark of *vernus*, which might be useful in tracing it out. He says, *vernus* has the leaves of *Persicum* and the flowers of *Coum*; but, in the Experimental, we have at least ten kinds of leaves on *Persicum*. The wisest thing that Mr. Gordon ever said was this, "the name *hyemale* (winter) would be far more appropriate to this distinct species, for it has done flowering before the spring commences." Yet Lindley, Don, Sweet, and Loudon, mark *vernus* as flowering in March and April, in their books, catalogues, and dictionaries; so that none of these authors knew the true *Cyclamen vernum* of Miller first, and of Gordon last. Miller and Gordon were more practical than the others, and wrote from what they practised, and I want to get the plant they meant. The *vernus* of all other British writers, as far as I know, must be *Coum*.

In all the collections which I have examined for the last ten years, *Coum* has taken the name of *vernus*; and all the *vernum*s which have been sent to the Experimental garden have turned out nothing but *Coum*. *Atkinsi*, or, more properly, *Atkinsoni*, is a cross from *Coum* by *Persicum*; but the habit of the whole of that breed, which is now so gay, and so very numerous, at the Wellington Road Nursery, takes after *Coum*. Therefore, they must, or ought to be managed, in potting, quite differently from the *Persicum* race, and also from the Italian race, represented by *hederifolium*, *Neapolitanum*, and *Europeum*—the only three distinct species known to science, after *Coum*, *vernus*, and *Persicum*. *Coum* is different in habit from all these, but whether the habit of *vernus* be the same as that of *Coum*, I forget, for it is more than a quarter of a century since I last saw a plant of *vernus*, which, I fear, is all but lost, notwithstanding that nine growers out of ten believe they possess it.

None of our readers need be told, now-a-days, that those of us who know most about bulbous plants prefer to have all bulbs, in pots, covered with the mould. Even the *Cyclamen Persicum* some of us would prefer being all covered, except just the very crown, where the leaves and flowers come from; but no mould should touch either the bottom of the leafstalk, or the flower-stem. But that way of doing

it, or the more common way of having the bulb half buried only, will not, or at least should not, be applied to *Atkinsoni*, or to *Coum*, or to any individual plant of that most charming section, because the habit of that race goes after *Coum*, as I have just said; and *Coum* must be covered entirely, because that is its habit, which a bulb of it tells, when in growth, as plainly as an infant will tell its mother when it wants nourishment. The way *Coum* and all the *Atkinsoni* breed tell how they ought to be potted, is this: if the crown of the bulb is above the surface, the leaves fall over round the sides, and make an effort to bury part of the footstalks in the mould, so as to give them a firmer hold of it, as it were. That is quite contrary to the habit of the father of that race, *Persicum*: no matter how you pot him, the leaves and flowers rise at once from the crown, as rigid and upright as the leaves of Mr. Skirving's best Swedes, the next nearest bulb to liken to *Cyclamen*. *Coum* has the same habit with its own flowers: the stems, or stalks, of the flowers bend down to get more hold of the soil long before the flower-bud comes in sight; and to give sight, or daylight, to such flower-buds, by raising the crown of the bulb above the surface of the mould, in the bed, or pot, would be exactly blinding them, although the thing may seem curious, without giving it a thought. But it is no more natural for *Cyclamen Coum*, and for all other Cyclamens which take after it, to make its flower-buds in daylight, or to make the first stretch of the footstalks of the leaves in daylight, than it is for a puppy to see the moon the night he is whelped; and to pot these "roots" above ground is just as groundless, and about as serviceable, as the attempts of young hopeful to open the eyes of the puppy next day, to look at his war-horse. Therefore, all who have grown the older Cyclamens, and those with them, who begin growing the new-improved race, the clan of Atkinson, must bear in mind that the bulbs should be kept out of sight, by heaping half an inch of mould over their topknots. Both parties will also remember, and not forget, that I want to learn how *Cyclamen vernum* ought to be potted; and that I would rather learn the truth from *vernum* itself, than from any of my own kith or clan; and that if *vernum* is still among us, that I sigh for the renewal of our former acquaintance. The rest of the world may as well know at once, that there are but six true and distinct species of Cyclamens, one of which, *vernum*, "blows" from Lord Mayor's Day to the turn of the new year. Three of them—*Coum*, *Persicum*, and *hederifolium*—flower in the spring; and two—*Euro-
paeum* and *Neapolitanum*—bloom in the autumn. All other names—as *repandum* and the like—are mere fictions, or given to some seedling variations from the half dozen.

D. BEATON.

NOTES ON THE CULTURE OF A FEW OF OUR BEST TABLE APPLES.

In these days of high culture, and additional kinds, we scarcely miss the oft-lamented *Golden Pippins*; indeed, many of the present generation never saw or tasted one, and amongst such are many gardeners. We will, however, leave the *Golden Pippin* to the poets, or the writers of the marvels of by-gone days, and rather deal with such as take a high place in the dessert in our times, and which are known at present to succeed. I am not going to run over catalogues, but rather content myself with pointing out the peculiarities of some with which I have been practically familiar for years. I must refer to quality, bearing properties, and habit of growth. The latter is not unimportant, for most of our pruning is controlled in some degree by such, and by modes of culture.

I may first observe, with reference to culture, that I shall merely point to peculiarities as far as my experience goes.

RIBSTON PIPPIN.—This is too generally known to need description. But its qualities differ much in different

situations; and this is, I believe, a very general complaint. I have frequently conversed with practical men about it, but I have seldom heard an attempt at a solution. The thing, however, has long been tolerably manifest to me. I believe that a very high state of culture does not suit the *Ribston*, as to flavour and texture: such produces a large and handsome fruit, but generally somewhat mealy. Some years since, I was fairly astonished at tasting *Ribstons*, at a neighbouring farmer's, far superior to my own, which were splendid fellows; whereas the farmer's were coarse-looking, russety, and moderate-sized fruit; but they were most excellent. Now, my trees were pruned very thin—the sun penetrated every portion of them. The farmer's tree was a thick-stemmed old standard, of some fifty years, and so choked with wood in the interior, that the blossoms there scarcely ever set. *Ribstons*, in my opinion, require a cool soil. The farmer's tree stood in a field which required draining.

LAMB ABBEY PEARMAN.—I much fear this Apple is not so generally known as it ought to be; as it possesses rich flavour, immense bearing properties, and is a very long keeper. This kind has never missed a full crop, with me, for twenty-four years, and the only misfortune is, that it is too free a setter: the fruit is, in consequence, apt to be under-sized. It should be planted in the most liberal soil—loamy and rich, for it will bear manure. The next thing is hard pruning: all, or nearly all, of the interior spray should be cut out, and the fruit thrown chiefly on the exterior of the tree. It should be winter pruned annually, and might occasionally receive a surface dressing.

MARGIL.—Many persons prefer this Apple to the *Ribston*, and, indeed, it is a keen competitor. It is somewhat liable to canker: this must be borne with, for the sake of its qualities. Some years since, I had a full-grown tree, or rather bush, of this kind, that cankered so badly, and the fruit so specked, that I made up my mind to destroy it. On taking it up, however, I found that it had some nice surface roots, the deeper roots having descended into some coarse, dry sand. I prepared a platform, and replanted the tree, using a compost of very stiff loam, well manured, and it is astonishing what a fine tree it has become—we look to it annually for some of the best of our Apples. The *Margil* enjoys rich surface dressings; and as for pruning, very little is needed by it, as it produces so little wood, and is, I think, better for a partial shade about the fruit.

KING OF PIPPINS.—This is an enormous bearer—indeed, generally too profuse. Consequently, it requires all interior spray to be pruned away, or spurred back; for if any fruits set in the interior of such trees as this, they detract sadly from the size, colour, and character of those about the extremities. Like most of our great bearers, it will not continue many years to produce crops, on light and poor soils, without a manifest deterioration in the produce.

HICKS' FANCY.—I do not consider it eligible here to give the various synommes, or aliases, of what fruit I refer to: it would occupy too much space. *Hicks' Fancy* is a somewhat capricious Apple, oftener good than bad. When in first-rate condition, it is scarcely excelled by any. When inferior, the crop is perfectly worthless.

This is a puzzling circumstance, and, I think, not much dependant on seasons. One thing may be observed, that, unless the fruits colour a rich bronzy russet before gathering, they are rarely good. When they are bad, they are small and colourless. The shoots should, therefore, be kept very thin; and, as the Apples are liable to set too thick, they should be thinned out betimes, and surface dressed.

ORD APPLE.—This is a tender kind, and no wonder, having been raised from seeds of the celebrated *Newtown Pippin*. It requires a very peculiar mode of treatment, and should, by all means, be induced to root near the

surface, by dressings. This kind originated some forty to fifty-years since, if not more. When I came to Oulton, in March, 1828, there was a very fine dwarf tree of this kind, which bore freely; but, unluckily, my system of reserving power over the roots, which I had even then commenced practising, had not been known to the planter. The natural soil was sandy, and at about two feet in depth a clear red pit sand was to be found. This tree remained more than twenty years afterwards; and, in warm summers, those fruits which grew on the exterior boughs, and which, by consequence, became highly coloured, were most delightfully flavoured, in the months of March to May, for that is their period. But in bad summers they were worthless. When good, they are exceedingly tender, and full of juice of a highly vinous character; and a person who knew them not would imagine he was eating a first-rate Apple, on October 1st, from the tree, for they taste not of the fruit-room. On taking this huge tree up, to burn it, roots of all sizes were to be found ramifying in the sand, many of them four feet in depth.

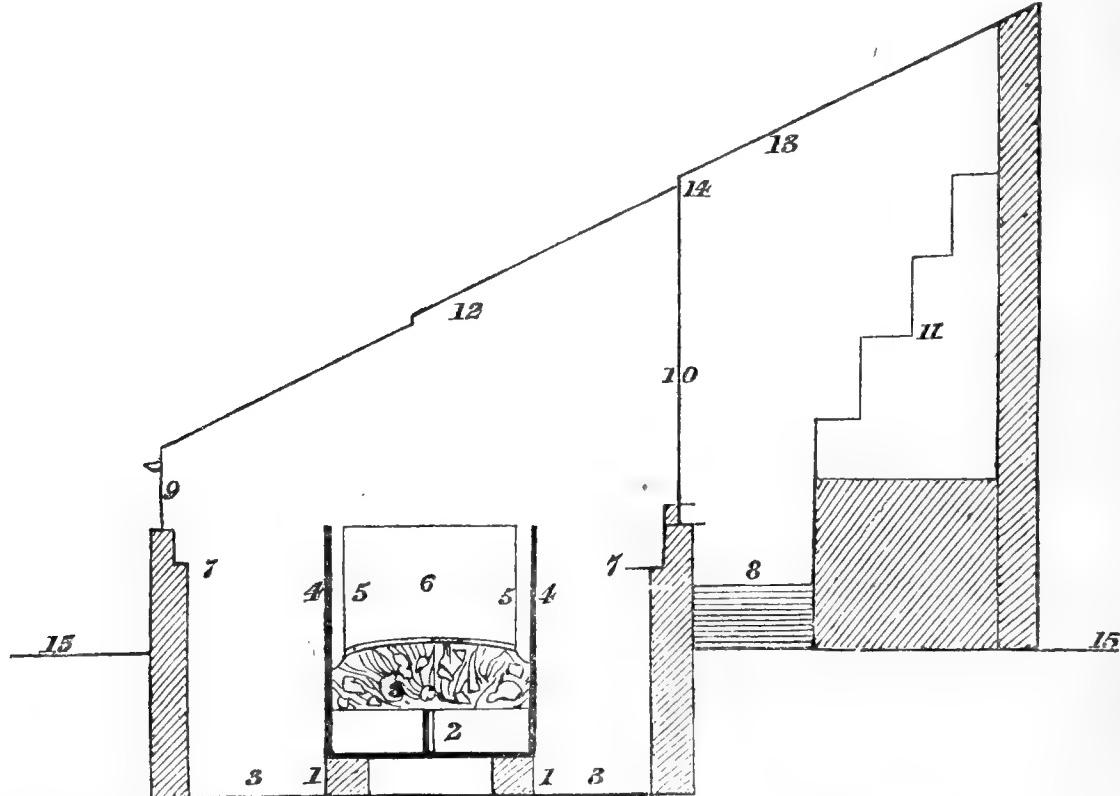
Feeling assured that this was a matter of climate, as well as of false rooting, I made up my mind not to be thus foiled, and I made a station for a fine plant I had grafted, just one foot deep of pure maiden, turfey loam—the tree, a dwarf, planted on the surface. I have now what I desired—a clean-barked, short-jointed bush, which has borne, this summer, a dozen Apples; but how altered from those of the old tree! Those used to crack and rift most abominably, but these are sound, bright skinned, and much finer shaped. This is a favourite idea of mine, and one day I may handle the subject on its own grounds.

I intend to continue such remarks, believing that it is of very considerable importance to offer to amateurs and the tyro the experience of many years. Let me at the same time caution them to use the advice warily. The experience of the most sage may be negatived by a great change of circumstances. Nevertheless, we must push on to principles, without fear of the cobweb-meshes of prescription.

R. ERRINGTON.

(To be continued.)

TANK HEATING, FOR PROPAGATING, &c.



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| 1. Piers on which the tank rests. | 7. Small shelves for plants. |
| 2. Tank, three feet and a half wide, divided in the middle, made of deal one inch and a half thick, four inches deep, and covered with slate. | 8. Passages. |
| 3. Clinkers above slate. | 9. Front glass, opening outwards. |
| 4. Sides of outer boxes, set on tank, one inch and a half thick. | 10. Division glass between the two houses, sashes sliding past each other. |
| 5. Sides of inner boxes, half an inch thick, and kept apart from the outside, so as to keep them from earth, &c. | 11. Stage in greenhouse. |
| 6. Earth, or tan, in boxes. | 12. Every alternate light slides down. |
| | 13. Every alternate light opposite the fixed one slides down. |
| | 14. Lights that do not slide are raised by brackets. |

WHEN our correspondent ("PAUL RICAUT") speaks of building his pit, or propagating-house, against a north wall, I presume he means making a lean-to against the south side of it, facing the south, or nearly so. It would require a person of good experience, and a full knowledge of the things liking such treatment, to succeed in propagating with a north aspect, more especially if that is the only convenience possessed. In summer, many things would strike sooner on a north aspect, with less trouble than on a south one; but the plants would require to be moved to sunlight as soon as they would bear it. In a house facing the south, each pot may be exposed to sunlight, or shaded, just as it may be required.

So far as mere utility is concerned, it matters very little for the purpose intended, whether a lean-to house, or pit, is decided upon, or a span roof, with low walls to receive it, on the east and west side, the house running north and south, and sufficient headway in the centre to allow of free movement. Where expense is an object, and a high wall is already in existence, facing the south, that would be a consideration in the shape of economy. In either case, the roof might be a fixture, if desired. In the lean-to, the ventilators might be swung at top; in the span-roofed, a double ridge-board might be used, as spoken of the other week, with ventilators between them. Before our correspondent decides, I would call

his attention to the foregoing engraving of the end section of a house, as that is the most useful and economical combination of propagating-house, hothouse, forcing-house, Vinery, Cucumbery, and Melonry, in unison with a greenhouse, all heated by one tank, that I have ever met with. A small conical boiler is used, similar to that employed by Messrs. Rogers and Rendle; short iron pipes, about a yard in length, are fixed to the flanges of the boiler; and to these leaden pipes, from an inch and a half to two inches in diameter, are attached, and communicate, one with the flow side, and the other with the return side of the tank. The tank is of wood, two inches thick,—an inch and a half would do,—beat well at the joints, like a brewer's cooler. It is from three feet and a half to four feet wide, and four inches inside would be deep enough. A division goes up the centre, except for about a foot at the farther end, to allow the water to run round freely. This supports the stout slate, which covers it across, bedded in red lead, or cement. This tank is only raised a little above the ground; but wooden boxes, averaging four feet in height, but ranging in size according to the height of the plants wished to be grown, are made to stand on the slate cover. That cover is packed over, to the depth of about a foot, with clinkers, &c.; and over that is placed the soil, tan, &c., kept from the outside box, for two or three inches, by thin boarding, the cavity besides keeping the soil from the outside box, allowing the heat to pass into the atmosphere of the house. In all tank heating, if the top is much covered, and the sides are of wood, open spaces should be left, to give top heat. In these open spaces, the slate covering should be moveable at places, so as to let vapour out at will. Let it be recollectcd, that, if the top is covered securely, heat from a tank will be just as dry as that from pipes.

The distinguishing feature of the house spoken of is, having the greenhouse behind it, and separated merely by a glass division, the first being sunk some two feet below the ground level, and the other raised about eighteen inches above the level. If the top of the boiler be about two or three feet below the level of the tank, the circulation will be all the more powerful. This fact, in certain grounds where it is not comfortable to go down, would determine, to a certain extent, the position of the tank.

For instance, suppose our correspondent resolves on having a lean-to house,—ten feet high at the back, and five feet and a half high in the front, and can sink little for a boiler, and the contemplated inside width ten feet,—then he might make the floor of his house about thirty feet long, on the ground level, or just a few inches above it; and place a wooden tank along the centre,—twenty-four feet long, three feet and a half wide, and four inches deep,—supported by five brick piers on each side, three feet and a half in height, or stout oak posts, of a similar height. This would permit of a shelf one foot wide along the front; along the ends, two feet wide; and along the back, one above another, of eighteen inches wide; and a walk of two feet all round. If deemed desirable, enclosed spaces might be made below the tank; and there Seakale, Rhubarb, and even Asparagus might be forced. Suppose, again, that, in a house of a similar size, the front wall was only to be from four feet and a half to five feet in height,—then, as that would so far save bricks, we should only have one pathway, near the centre; we would place the tank on supports, within a foot of the top of the wall, along the front, and perhaps one end; have a pathway of two feet and a half; and a platform, or raised stage, at the back. By leaving spaces of the slate covering of the tank uncovered, there would be plenty of heat for the atmosphere. In such a house, we recollect seeing a tank two feet wide along the front, without any divisions for propagating purposes; but two three-inch pipes were taken from the farther end, and returned, underneath the stage, to the boiler. In such a

case, the whole of the tank was covered over with ashes, kept in their place by the wall of the house in front, and by a nine-inch board, raised above the sides of the tank next the pathway. This afforded easy means for examining the cuttings; and when potted off and growth progressing, they were moved to the platform, or stage, behind. In such circumstances, I believe that the wooden tank, covered with slate, would be the cheapest, and give least trouble in fixing and arranging. By placing the tank in front, it will be evident that one side will be supported by a four-inch set-off in the front wall, and that piers, or posts, will only be wanted behind, next the pathway. One thing must be thought of,—as little heat will escape from the sides and bottom, the top covering will be all the hotter; but, in a largish house, means must be taken for letting that top heat into the atmosphere of the house, when desired; otherwise, the cuttings may be too hot, and the rest of the plants too cold.

I may here mention, that when I saw the tank in the house of which we give a diagram, about a year ago, it was perfectly sound then, and wanted nothing, although it must have been doing service for twenty years. I attribute this to its standing free of the floor, and to its having *never felt paint*.

In a late article, our correspondent would see the economy of sinking houses, as respects exposure; but, as mentioned above, when moisture and damp are soon reached, the extra advantage will be more than counterbalanced by the evils. Besides, it is no joke removing some two feet of earth, so as to sink for a pit-house; and then, of course, the stock-hole must just be sunk proportionally as much. The former plan of supporting the tank on bricks and piers, on the ground level, involves least trouble. That mode can only be resorted to when the tank is of wood or iron. Iron tanks, in my opinion, would be much more expensive than iron pipes.

If, for various reasons, it be resolved to sink the house, then all the earth from the paths might be thrown into the centre, for a platform; but, in that case, you will need a four-inch brick wall, with piers every eight feet or so, to keep the earth up. The tank then, however, might stand on the top of the platform without any piers. This, on the whole, would not be any saving; and the solid earth platform would deprive you of all chance of placing anything below it, that did not at the time require much light.

We have seen brick tanks made on the top of such earth platforms, firmly rammed. But, if that is not well done, they will be apt to shrink, and the tank will shrink and crack with it. These brick tanks require more nicety than wood. In making them, we should like two bricks deep for the bottom, and wider, by six inches at least, than the intended tank bottom. The ground being thoroughly rammed and levelled, place the first layer on good mortar. Cover the joints and the tops, as you place the second layer, with the best cement—the dark-coloured so much used by bricklayers. Two bricks on bed will do for the sides, and one brick on edge for the centre, with a piece of slate below, so as to make it of the same height as the sides. This, as already referred to, divides the current, and makes a flow and a return in the same level tank. All these bricks must be thoroughly soaked in water, to dispel the air, before being used. When the tank is thus formed, the workman begins at one end, and, wetting the bricks with a brush as he proceeds, covers the bottom and sides of his tank, inside, with his mixture of cement and sand, from a quarter to half an inch in thickness, smoothing it quickly as he proceeds. In a day or two water may be admitted. Frost at no time must have entrance, or it will cause the cement to fly and crack. Provided the top of your boiler (a close one) is from three feet and more below the level of the bottom of your tank, and you keep the tank supplied with water, and have the flow-pipe from the top of the boiler at one side, and the return-pipe going to the bottom

of the boiler from the other side,—heating is a matter of simple certainty, if the boiler is at all nicely fixed.

We lately saw a small house for young plants, with such a two-feet wide tank along the front, covered with refuse house slates, large cinders, &c., placed on the top for four inches; finer ashes next; and then sand, for plunging the cutting-pots in. The tank was within eighteen inches of the top of the front wall. The house, or pit, was about seven feet wide, allowing a walk of two feet, and a little platform stage behind, where the plants were placed after they were struck. The back wall was eight feet high, so that in such a house plants of a good size could be kept on the stage.

The same principle will apply in a small span-roofed house. I know a little one that answers admirably: it is eight feet wide, thirty feet long; side walls, four feet high; height to apex, seven feet and a half; house sunk inside below the ground level, two feet. The stove, which heats a couple of these, is at the end opposite the door. In one house, the tank goes all round, except at the door, and this house is used chiefly for cuttings; the other has the cuttings only on one side, and plants hardening off on the other. A two-feet walk in the centre leaves a platform of three feet on each side. Under such an arrangement, the person in the pathway must stoop a little to get at the plants next the sides.

The cost of such tanks will depend considerably on the position. Securely made, they are just as good, but no better, than iron pipes. If covered securely, the heat from them is just as dry as from a pipe when it is hot. One presumed advantage, is the supposed kind, moist heat they admitted. This is a mere popular fallacy. If not securely covered, it is possible there may be too much of a moist heat. If some parts of the covering are left loose on purpose, by removing these you can allow hot vapour to permeate the house at will, which you could not so easily do with iron pipes. A great thing in their favour is, that, after procuring the boiler, the bricklayer and carpenter in your neighbourhood will pretty well manage all that you require, with an hour's assistance from the smith, or plumber. The reason why I spoke of connecting the boiler with the tanks (after the three first feet or so, which should be iron) with lead pipes, was, to avoid the expense of knee-pieces, bends, &c., with their sockets, if of iron. Whatever form of tank be used, it would be advisable to have a part of the cover to move, where the flow and return pipes are respectively situated, so as to examine them frequently, and see that no leaf, or other matter, has got into them.

Notwithstanding their simplicity, and the ease and comfort with which tanks are managed, did we, upon inquiry, find, that, owing to having to bring wood, bricks, or workmanship, from a distance, iron pipes would, on the whole, be as cheap, or cheaper, then we would decidedly prefer them for all purposes. It is just as easy to get bottom heat from pipes, as from tanks; and dry, or moist, heat, at will. This matter, however, has frequently been referred to. A couple of four-inch pipes, enclosed in a chamber, or surrounded with open rubble, terminating in finer material, would give enough of bottom heat to a bed wide enough to be easily got at. If the house was large, other pipes would be required for top heat. Or—say, in a house twelve feet wide, six feet high at front, and twelve feet at back—four pipes might be enclosed in a four feet wide chamber, or covered over to a necessary height with open rubble, and slides left in the side walls, to allow the heat to come out as wanted. The moistening the material round the pipes will always cause a moist heat when required. The same modes will apply to span-roofed houses.

One great argument in favour of tanks—viz., the forming a great reservoir of heat, after the fire has got low, or even gone out—can hardly be much depended on, since the practice has commenced of making them allow, when deep, the lower strata of water

hardly ever becomes much heated. Tanks of any fair size are, in one sense, much better than a too small amount of iron piping; as, in the latter case, to keep up a desired amount of heat, the pipes must be made hotter than is good for vegetation around them. It is seldom that tanks require to be made so hot, owing to the extent of their surface. It is always mistaken economy to limit too much the extent of piping for heating a house, and the same rule holds good as respects tanks. About 180° is a heat beyond which the water in either case should not often rise. When either pipes, or the surface exposed, of tanks, get much hotter, the air next them is parched, and rendered unhealthy for plants.

R. FISH.

SUDBROOKE HOLM.

THE SEAT OF R. ELLISSON, ESQ.

ABOUT the middle of last October, I had the pleasure of visiting this beautiful place. It is situated on a very gentle rise; but the country round it is rather flat, and, in consequence, the mind of a visitor is drawn to examine more closely, as it were, the home scene, not being distracted with distant objects. The place is seven miles from the ancient and picturesque city of Lincoln. The cathedral is of a noble and very elaborate style of architecture, and is worthy of a close inspection, and a long journey to see it. From Lincoln station, there is a railway and station within half mile of Sudbrooke Holm. At a very short distance from this station, I was directed to a gate, through which I passed, and found a winding walk, which led me over a bridge and through a plantation of young, thriving trees, chiefly Oak, to a kind of temple seat, facing a long, straight, broad walk, bounded on the right by a dense mass of evergreens, which at that time of the year were in their best attire; on the left there are several irregular groups of ancient Oaks, Ash, and Elm, evidently many generations older than the walk, or the dark evergreens on the right. As I gently moved along this noble walk, I caught glimpses here and there of a lake in the park, the extent of which is skilfully concealed. It was the middle of the afternoon, and the beams of the lowering sun danced upon the water, and the luminary itself was reflected in the limpid element. The trees had put on their autumn livery, so loved by the artist's eye, and all bore that quiet, pleasing, reposing look, that only such a scene and such a season can give. I was alone, and, excepting two men at work clearing out the sedges in the lake, no other signs of a living world was visible. It was a truly English and, to me, a delightful scene, not easily forgotten. I turned occasionally to look at the evergreens, which were chiefly fine, thriving Portugal Laurels, intermixed occasionally with spiral Conifers. The walk terminates with a dial, flanked by a pair of lofty, well-formed Red Cedars, and backed by a dense mass of Laurels. To the right is the way to the walled gardens, and to the left a second arbour, which faces another walk, leading through a Pinetum, in which I noticed many fine specimens of Pines,—such as *Cedrus deodara*, *C. Libani*, Araucarias, &c.,—all in strong health. I then turned towards the gardens, and noticed that, to take off the dull uniformity of a brick wall, there were square pillars at regular distances, carried up rather above the level, and surmounted with stone globes. These had a very good effect. Over the central gate, out of this pleasure ground, there is a pair of eagles cut in stone.

The gardens within the walls cover an area of rather more than four acres. The form is a parallelogram, which has the advantage over a square of giving a greater length of the valuable south wall. A cross wall divides the garden into two parts: one is much less than the other. In this lesser part, I found the forcing and plant-house, where I met Mr. M'Bey, the chief of the gardening establishment. Like all good gardeners, he greeted me with a hearty shake of the hand, and that pleasant look which showed as plainly as possible that he was not ashamed of his place, but, on the contrary, proud to show me what he had been able to do in it, backed by his liberal employer. The houses are numerous and extensive, and kept in excellent order. We first entered the stove, in which I noticed—a good Stephanotis, in full flower; two or three species of the golden-flowered Allamanda; a very fine *Rondeletia speciosa major*; and the good old plant *Aphelandra cristata*—a plant that is truly valuable for autumn decoration. There were also some good *Dipladenias*,

well bloomed. These were judiciously mixed with, and set off by, large Ferns, and the fashionable and always beautiful variegated-leaved plants.

The greenhouse forms a span-roof with this stove, separated from the latter by a central wall. The plants on the stage were arranged something in the ribbon style—Fuchsias formed the back row, then Scarlet Geraniums, then Verbenas, finally edged with green Lycopods. This is the first attempt I have seen in arranging plants in that style, and I think it is much more worthy of imitation than the promiscuous mixture we generally see in collections of plants. On the front low platform, I saw some good specimens of Heaths, Epacris, and other hard-wooded plants, growing, indeed, too large for the house; but they will have more room shortly, for a new large span-roofed house was just being finished, purposely for such plants, though Mr. M'C Bey informed me he intended to fill it with Chrysanthemums this year, as he was afraid the fresh paint would injure his more susceptible plants. I consider this was a wise and prudent caution. From this greenhouse, we walked to examine the Pine pits. Here, that fruit is grown entirely in pits. They are fifty feet long and fifteen feet wide, rather steep span-roofed, and the lights lift up whenever any operations are necessary. They looked very well in their position. They are heated with hot water.

Pits for Cucumbers, early vegetables, and for protecting and propagating bedding out plants, are placed near the glass-houses, in a square surrounded by an evergreen hedge, with walks between them. This, also, is an excellent arrangement, for such pits and frames do not associate well with any other gardening objects.

The Vineries and Peach-houses are placed against the south wall, and are extensive. The crops of the earlier houses were, of course, all gathered; but, in the later forced houses, I saw some good fruit still hanging.

In the large square of the garden, the south wall is covered with healthy Peach, Nectarine, and Apricot trees. The ripening of the wood, and the protecting of the early blossoms, is effected by having the walls flued—a good old method, too much neglected now-a-days. This warm summer, combined with this artificial heat, had caused some Black Hamburgh Grapes to ripen, even so far north as Lincoln, very well indeed—I have never seen finer out of doors.

In the borders, I again saw that very neat and useful Cabbage, called the *Rosette*, which I described as having seen at Headington Hill lately. I can confidently recommend it as a desirable and much superior autumn vegetable.

Pear trees in the open borders are here trained in the pyramid and drooping styles, and are very healthy, fruitful trees.

Leaving this interesting part of the grounds, a winding walk brought us to the modern flower garden. In the centre is a raised Italian bed, of considerable size. A straight walk leads down the middle, and is flanked by handsome vases. The beds are on turf, and filled with the usual flowers, which, when I saw them, were past their best. The south side is bounded by a conservative wall, which, when the plants against it are more advanced in growth, will greatly add to the interest of the place.

Hitherto, I have done nothing but praise everything I saw there; indeed, I could find very little that could be improved. The only point I should like to alter would be the Pinetum. I thought there were too many dark-coloured Coniferæ, and that they were too much crowded. I would certainly take away a considerable number of Yews, and substitute some of the more elegant and lighter-shaded species. I must, however, conclude by saying, that I was really pleased with the place, and recommend all lovers of good gardening to go and judge for themselves.—T. APPLEBY.

APRICOT GROS ROUGE—BELLE D'ORLEANS CHERRY.

I HAVE read with very great interest the account you are so accurately giving of "Fruits suited to Great Britain." I observe, that, under the head of Apricot *Gros Rouge*, you state that it is a variety of the *Peach* Apricot. Now, Mr. Rivers, in his "Descriptive Catalogue of Fruits for 1851," informs the public that the *Gros Rouge* is a new variety of the *Moorpark* race. When a country gentleman, so well informed as you are, differs from a nurseryman so intelligent and skilful as Mr. Rivers, how are we students of THE COTTAGE GARDENER to arrive at the truth?

I have grown the *Gros Rouge* against a south brick wall for

the last seven years, and it appears to me to be a hardy, healthy vigorous-growing variety. As yet, however, it has proved to be a shy bearer, as it has only produced about a dozen fruit all these years. The flowers open very sleepily, and scarcely expand at all: last spring, however, they opened rather less sleepily than in previous years. The fruit is as you describe—rich, juicy, and excellent. Its habit, growth, and hardness of wood, are all that could be wished, if it would only fruit more freely.

Belle d'Orleans Cherry.—Seven years ago, I was tempted to buy a trained rider of this earliest and richest of Cherries. It grew beautifully, covered itself admirably with fruit spurs, and was covered with blossom every spring, and was quite an ornament to the west wall of my garden. While in flower, no fruit tree can be more beautiful; but, alas! this is almost all it has ever done—a dozen fruit the most it has ever produced in any one season. The slightest frost destroyed the vitality of the blossoms. For the last two years, it has been protected in the same manner, and with the same material, as the Peach trees. While these bore abundant crops of fruit, this Cherry failed, as usual: hundreds of blossoms were killed by the frost, in spite of the protecting material; and of the hundreds that escaped injury, and set for fruit, only a dozen or so swelled to fine fruit: the remainder either did not grow at all, or dropped off in the stoning. I have, therefore, reluctantly dug the tree up, and thrown it away, as far too tender to be useful.—A LOVER OF GOOD FRUIT.

[*Gros Rouge* and *Moorpark* are both varieties of the *Peach* Apricot, and, therefore, *Gros Rouge* may be referred either to the one or the other.]

CALCEOLARIAS AND THEIR FAILURE.

I AM glad to find that my appeal to the growers of Calceolarias (out of doors), to come forward and state their experience of the plant, has been responded to by two correspondents (pages 185 and 186), both giving a favourable report of the bedding kinds used by them during last summer. It is to be hoped that the plant's usefulness is not drawing to a close, as was feared by many; but I also hope that others who may not have been so successful will also come forward and publish their case, for the result of an unsuccessful experiment is scarcely less interesting than of one that succeeded. The dangerous points and places in our path ought to be as carefully pointed out, as rocks and shoals are to the mariner; and one who records his disappointment in not having such a good display as he expected of such and such things, treated in some proper (but perhaps novel) manner, is as much entitled to our thanks, as the one who puts forth his success.

In the matter of Calceolarias, there is evidently something wrong. Our correspondent ("T. C. F.", page 185), says, "He believes the failure to have been general. But, in his case, they did very well on stiff, wet ground, newly broken up and drained, the beds being composed of chopped turf." Under such favourable circumstances, they had a much better chance than in many others. But fresh earth will not always grow them, for I had some planted on ground which had been embanked to the depth of several feet of fresh earth, that had not been in cultivation for at least fifty years or more, and with no better success than in the ordinary flower-beds. With me, the plants do not die off during the summer, as complained of by many; but they did not flower much after the first blooms of the season were over. I attributed this to the heat and dryness of the month of June. The plants became, in a manner, stunted and partially ripened; and when moist weather did set in, the growth was in wood, and not in flowers, the latter only being formed so late in the season as to be useless—cold, bad weather setting in. Now, I do not despair of having Calceolarias as good as ever, next year again, if the season be favourable; but it is somewhat odd that they should have become so barren of flowers, both in 1857 and 1858: the early part of both seasons, however, being very hot may have caused them to do so.

In regard to the cultivation and hardihood of the shrubby kinds, mostly used in bedding, I may say, that in the winter of 1850-51, two beds of the old *Calceolaria angustifolia* stood without losing a single plant, and with very little protection, and, as might be expected, their first blooming—which, of course, was early for Calceolarias—was abundant and fine. But there was little succession, and towards August some of the plants died off. The situation being a dry one, and soil not deep, and watering by hand being impracticable, the result need afford no surprise. I have not, therefore, endeavoured to save any whole beds since,

and only solitary plants occasionally. Young ones being raised so easily, it is not worth caring for older ones. But, as my culture differs in some respects from that of those given at pages 185 and 186, I may be allowed here to explain it.

In the middle of the kitchen garden there is a brick pit, six feet wide, and one hundred feet long; the back, eighteen inches, or more, high; the front, about a foot high; the whole being of four-and-a-half-inch brickwork, with timber top-plate. This pit is generally more than half full of Calceolaria cuttings, placed in rows, about three inches apart, and about two inches, or less, from each other in the row. These are put in from the middle to the end of October; and, if the weather be dry at the time, they are watered, and some old lights placed over them; but if moist, they are left open, and the lights are only put on when sharp frosts set in. Generally speaking, every cutting becomes a plant. But there is not much growth until February; and sometimes by the middle of March they have grown so much as to render it necessary to take up alternate rows and plant elsewhere, in order to give the remaining ones room; but none are potted, and no description of plant, that I am aware of, moves so well. The roots, being a great number of small fibres, radiating from the stem, and all of equal length, clasp the earth within them so firmly, that it all adheres, and they plant out admirably. Last year, the most of them were in the beds early in April, a slight protection being given on cold nights. I have even planted some out in March, with tolerably good success; but this is too soon, in a general way. With me, the soil is too light for their doing well in dry weather, which is also a reason for planting them early in the season, and for their standing so well in the winter.

I shall certainly be sorry to lose their services in the flower garden, as nothing conduces more to general effect than good beds of yellow Calceolarias; and, taking the compact habit of the plant, the brilliant hue of the flowers, and their adaptability for bouquet or other purposes, I trust the day is yet far distant when we have to bid it farewell from the garden. But, as practical notices are more useful than conjectures, I may here conclude by saying, that, so far as my experience goes, it proves the plant capable of enduring a good share of hot, dry weather; but this checks its growth, and, the continuous formation of flower-buds not going on, there is a long and serious blank after those in flower cease to be ornamental. But, when we hear of whole beds failing in the moist districts of Stafford and Lancashire, it is proper to inquire if some other agent is not at work than merely the hot weather complained of. The whole subject being one of great interest to the flower gardener, it ought to be sifted, when, doubtless, something useful to the community at large may be gleaned from the various reports.—J. ROBSON.

THE CHEMISTRY OF GARDENING.

CHEMISTRY teaches us of what all things in and upon the earth are composed, the changes to which they are liable, and how to promote or prevent those changes. Chemistry, therefore, is peculiarly applicable to gardening, for gardening has for its objects the production of the fruits, flowers, and culinary vegetables of any climate, in any habitable place, in perfection, and at the least possible expense.

Now, to attain that perfection, and as much as possible to avoid unnecessary expense, a gardener ought to understand the changes going on in every part of his plants during every period of their growth, and how those changes may be modified. Not any of this can he understand, unless he has a knowledge of chemistry. Chemistry, as applied to the cultivation of plants, has made large onward progress since the days when Sir Humphry Davy first lectured upon the theme; yet even then he justly pointed out, that, "If land be unproductive, and a system of ameliorating it is to be attempted, the sure method of obtaining the object is by determining the cause of its sterility, which must necessarily depend upon some defect in the constitution of the soil, which may be easily discovered by chemical analysis."

"Some lands of good apparent texture are yet sterile in a high degree; and common observation and common practice afford no means of ascertaining the cause, or of removing the effect. The application of chemical tests, in such cases, is obvious; for the soil must contain some noxious principle which may be easily discovered, and, probably, easily destroyed."

"Are any of the salts of iron present? they may be decomposed by lime. Is there an excess of siliceous sand? the system of

improvement must depend on the application of clay and calcareous matter. Is there a defect of calcareous matter? the remedy is obvious. Is an excess of vegetable matter indicated? it may be removed by liming, paring, and burning. Is there a deficiency of vegetable matter? it is to be supplied by animal and vegetable manure."

"A question concerning the different kinds of limestone to be employed in cultivation often occurs. To determine this fully in the common way of experience would demand a considerable time—perhaps some years, and trials which might be injurious to crops; but by simple chemical tests the nature of a limestone is discovered in a few minutes; and the fitness of its application, whether as a manure for different soils, or as a cement, determined.

"Peat earth of a certain consistence and composition is an excellent manure; but there are some varieties of peats which contain so large a quantity of ferruginous matter as to be absolutely poisonous to plants. Nothing can be more simple than the chemical operation for determining the nature, and the probable uses of a substance of this kind.

"The phenomena of vegetation must be considered as an important branch of the science of organised nature; but, though exalted above inorganic matter, vegetables are yet, in a great measure, dependent for their existence upon its laws. They receive their nourishment from the external elements; they assimilate it by means of peculiar organs; and it is by examining their physical and chemical constitution, and the substances and powers which act upon them, and the modifications which they undergo, that the scientific principles of cultural chemistry are obtained."—(*Davy's Lectures.*)

Science, it is true, can never supersede the necessity for a practical acquaintance with the operations of the spade, the knife, and the hoe; but it is their best guide—a pilot needed even by the most experienced.

The growth of horticultural science has been slow; for, although its dawn was in the Elizabethan age, yet it never afforded any distinct light to gardening until the beginning of the present century.

It is undoubtedly true, that in much earlier ages there were surmises born of inquiring minds, that are startlingly in accordance with the results afforded by modern vegetable chemistry and physiology; but they were no more than surmises; fortunate guesses, that, among many totally erroneous, happened to savour of truth. Thus Pythagoras forbade the use of Beans as food, because he thought that they and human flesh were created from the same substances, and modern research has rendered it certain that that pulse has among its constituents more animo-vegetable matter than most other seeds. Empedocles maintained that plants are sexual; that they possess life and sensation; and that he remembered when he was a plant himself, previously to being Empedocles.

Theophrastus and Pliny wrote more voluminously upon plants, but not with more knowledge of their physiology; and little or no improved progress is really visible until the sixteenth century was well advanced; for this branch of science was no bright exception from the darkness enveloping all human knowledge during the middle ages; and it was not until that period in which Bacon lived, that the human mind threw off the trammels of the schoolmen, and instead of arguing as to what *must be*, proceeded to examine and search out what *is*. The Reformation, the spirit of the age, was then not confined to religion. By delivering the human mind from thraldom, and teaching man to search all things, but to retain only that which is good because true, it gave an impetus to improvement which no tyrant opposition has ever since been enabled to check.

Such men as Bacon, Peiresc, Evelyn, Grew, and Malpighi arose. Bacon was the first to teach aloud, that man can discover truth in no way but by observing and imitating the operations of nature; that truth is born of fact, not of speculation; and that systems of knowledge are to be founded, not upon ancient authority, not upon metaphysical theories, but upon experiments and observations in the world around us.

Peiresc was a munificent man of letters, whose house, whose advice, and whose purse were opened to the students of every art and science. His library was stored with the literature of every age, and his garden with exotics from every clime, from whence he delighted to spread them over Europe.

Grew, in England, and Malpighi, in Italy, devoted themselves to the anatomical examination of plants, and these were followed by Linnaeus, Gærtner, and others, who, trusting only to the dissecting knife and the microscope, soon precipitated into ruins

all the fanciful fabrics of the Aristotelians, or guessers at truth. They were the founders of that science of vegetable physiology, which, enlarged and carried into practice by the late Mr. Knight and others, has advanced horticulture to a degree of improvement undreamed of by their immediate predecessor, Heresbach, when he informed the world, that, if the powder of rams' horns is sown, and well watered, "it will come to be good Asparagus."

The researches of Hales, upon the circulatory power of the sap-vessels; of Bonnet, upon the functions of the leaves; and of Du Hamel, Priestley, Ingenhousz, Sennebier, Saussure, and others, upon the action of light, and the nature of the gases developed during the respiration of plants, imparted still more useful knowledge to the gardener, and rendered his art still less empirical.

The same philosophers directed their attention, also, to the food of plants imbibed by their roots, and to the examination of their various secretions; but here they were joined by another band of nature's students; and no one conversant with the philosophy of plant-culture but will remember the debt he owes to Vauquelin, Lavoisier, Johns, Davy, and Liebig.

We shall endeavour to concentrate and arrange the results of the researches of the above-named disciples of nature, adding such rays, derived from lesser lights, as aid to render the whole more luminous, and such links of experiments and observations from similar sources, as make the work more connected than it would be without their aid.

A few gardeners may still exist who venture to think science useless—as there once existed a devotee of fashion who wondered why it was not always candle-light; but the greater majority of gardeners are now men of science, endeavouring thoroughly to understand the reason of every practice, and the supposed cause of each effect. To those differing from them we might name, if it would not be invidious, nearly all the most successful of our modern gardeners. To a man, these are well acquainted with gardening's relative sciences. We forbear from mentioning names, but we may remind our readers, without fearing to offend, of two departed scientific cultivators, M. Lavoisier, and our fellow-countryman, Mr. Knight. Lavoisier cultivated his grounds in La Vendée on scientific principles, and in a few years the annual produce of those grounds doubled that from equal spaces of his neighbour's soil. Mr. Knight has scarcely left a department of our horticulture unimproved, by that combination of scientific with practical knowledge which he, perhaps more than any man, had united in his own mind.

It behoves every gardener to follow in their steps, for though those great men who have gone before have done much for gardening, yet still more remains to be accomplished. We yet, on most points, do, and must ever, see through a glass darkly; but that is no reason why any one should withhold from the effort to elicit some light towards diminishing the obscurity; and we may all, without fear of misspending our labour, continue to act as if chemistry and physiology had still some secret to reveal to the inquirer.—J.

(To be continued.)

A MODEL LADY GARDENER.

IT may be interesting to some of your readers, who, like myself, keep no regular gardener, to hear how I contrive to keep a garden—140 feet by 60 feet—in very nice order, by working only two hours every morning, with the assistance of a lad, who is glad to be shown how to do things my own way.

This summer, I raised, from cuttings, so many plants, and potted them off, that in the autumn I was grieved, when I looked at them, to think that the greater part must die, as I had but a very small frame, which would only hold about seventy pots. Upwards of eighty more I took into a room in the house, but still there were many left. What was I to do?

I became desperate, sent for a carpenter in the month of December, and in one fortnight had a nice little greenhouse built, which more than held all my plants. It is twelve feet by eight feet. Four-inch pipes for hot water are placed along the front of the greenhouse, which water is heated by gas.

The gas stove is twenty inches high, and eight inches in diameter, placed outside the greenhouse, enclosed in a small wooden box, so that it is not seen. It will burn for weeks, if required, without any attention. But I am regulated entirely by the thermometer, which I keep from 45° to 48°. The expense of burning the gas is 3s. 6d. a-week, if kept burning night and day.

I intend trying some experiments, and one is, to grow a *Black Hamburg* Vine in a No. 1 pot. I intend purchasing a Vine, in a pot, three years old, and then transplanting it in this manner:—A layer of crocks at the bottom of the pot, and over that a layer of moss; then pieces of turf, yellow loam (from Epping Forest), a layer of bones, the same loam, with a little road sand, and manure laid over this to fill up the crevices; then a few more lumps of turf, and a little more mould; and then to place the Vine, and fill up with loam, dung, and a little sand, thoroughly mixed together.

I intend pruning it on Hoare's plan, to let one stem grow and bear Grapes, and to cut the other stem down to two eyes, to bear Grapes the following season. As soon as the leaves appear, I shall syringe them once a-day with nitred water, and twice a-week, if necessary, water the root with manure water.

All this may answer for the first year, but how is the Vine to obtain sufficient nourishment for the following years? I intend once a-year to take out, very carefully, by means of a stick, without injuring the roots, at least one-third, or more, of the mould, and fill it up afresh, and then wait to see the result. If fruit trees will grow for nine years in the same pot, and bear fruit, why will not a Vine?

I have about three dozen Tea-scented Roses, in pots—such as *Adam*, *Comte de Paris*, *Bride of Abydos*, *Eliza Savage*, *Devoniensis*, *Vicomtesse de Cazes*, *Narcissus*, &c., and thirteen of the best *Chinese* or *Bengal* Roses.

All these are attended to by myself, an enthusiastic—LADY AMATEUR.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 216.)

CHERRIES.

Graffion. See *Bigarreau*.

GREAT CORNELIAN (*Double Glass*).—Very large, oblate, marked on one side with a very deep suture, which quite divides the fruit. Skin thin and translucent, at first of a light red, but becoming darker as it ripens. Stalk an inch and a half long. Flesh yellowish, tender, very juicy, with a fine sub-acid, vinous, and rich flavour. Beginning of July.

GRIOTTE DE CHAUX.—Large, roundish-oblate. Skin dark red, and shining. Stalk two inches long, and slender. Flesh dark, tender, melting, and very juicy, with a brisk sub-acid flavour. End of July.

GRIOTTE DE KLEPAROW (*Belle Polonaise*).—Medium sized, roundish-oblate. Skin dark red. Stalk two inches long. Flesh dark, tender, and juicy, with a rich, sweet, and sub-acid flavour. End of July.

GRIOTTE DE PORTUGAL.—This is by some considered synonymous with the Archduke. It certainly bears a considerable resemblance to it in the size, form, and colour, of the fruit; but I have not yet had an opportunity of comparing trees of equal age, and growing under the same circumstances. I am, however, inclined to believe that they will prove to be, if not really identical, at least very similar.

Gros Cœuret. See *Monstrous Heart*.

GROS GOBET (*Montmorency*; *Montmorency à Courte Queue*).—Medium sized, oblate, marked on one side with a very deep suture, which forms quite a cleft at the stalk. Skin smooth and shining, of a fine clear red, but becoming darker as it ripens. Stalk very short and thick, half an inch to an inch long. Flesh white, tender, very juicy, and briskly acid; but when it hangs long it is agreeably flavoured. Middle and end of July. This has been, very incorrectly, made synonymous with the Flemish, and even with the Kentish.

Grosse de Wagnelée. See *Reine Hortense*.

Guigne Noire Tardive. See *Tradescant's Heart*.

HARRISON'S HEART (*White Bigarreau*).—Very large, distinctly heart-shaped, and uneven in its outline. Skin

at first of a yellowish white, but becoming all over mottled with red. Stalk an inch and a half long. Flesh firm, but less so than the Bigarreau, rich, and deliciously flavoured. Middle and end of July.

Herefordshire Black. See *Corone*.

Herefordshire Heart. See *Gascoigne's Heart*.

HOGG'S BLACK GEAN.—Medium sized, obtuse heart-shaped. Skin black and shining. Stalk an inch and a half long. Flesh dark, very tender, richly flavoured, and very sweet. Beginning of July.

HOGG'S RED GEAN.—Medium sized, roundish, inclining to heart-shaped. Skin red, freckled with amber yellow. Stalk an inch and a half long. Flesh yellowish, very tender and juicy, sweet, and richly flavoured. Beginning of July.

Hybrid de Laeken. See *Reine Hortense*.

Indulle. See *Early May*.

JEFFREYS' DUKE (*Cherry Duke of Duhamel; Jeffreys' Royal; Royale*).—Medium sized, round, and a little flattened, produced upon stalks of about an inch long, which are united in clusters on one common peduncle half an inch long. Skin deep red, changing to black as it attains maturity. Flesh red, firm, very juicy, rich, and highly flavoured. The juice is quite sweet, and not acid, like the May Duke. Ripe the beginning and middle of July.

JOC-O-SOT.—Large and handsome, somewhat obtusely heart-shaped, compressed on the sides, and deeply indented at the apex. Skin shining, of a deep brownish-black colour. Stalk two inches long. Flesh dark brownish-red, tender, juicy, rich, and sweet. Middle of July.

KENNICOTT.—Large, roundish-heart-shaped, and compressed on the sides. Skin of a fine amber yellow, considerably mottled with deep glossy red. Flesh yellowish white, firm, juicy, rich, and sweet. Beginning and middle of August.

KENTISH (*Common Red; Early Richmond; Pie Cherry; Sussex; Virginian May*).—Medium sized, round. Skin bright red. Stalk an inch and a quarter long, stout, deeply set, and adhering so firmly to the stone, that the latter may be drawn out. Flesh acid. For kitchen purposes. Middle and end of July.

Kirtland's Mammoth. See *Mammoth*.

Kirtland's Mary. See *Mary*.

Knevett's Late Bigarreau. See *Florence*.

KNIGHT'S EARLY BLACK.—Large, and obtuse heart-shaped, irregular, and uneven. Skin black. Stalk two inches long, deeply inserted. Flesh purple, tender, juicy, and richly flavoured. End of June and beginning of July.

Lacure. See *Black Heart*.

LADY SOUTHAMPTON'S.—This is a medium sized, yellow, heart-shaped cherry, of the Bigarreau class, with firm, but not juicy, flesh. It is now very little cultivated, and is but a worthless variety. End of July and beginning of August.

LATE BIGARREAU.—Large, obtuse heart-shaped, and uneven in its outline, broadly and deeply indented at the apex. Skin of a fine rich yellow, with a bright red cheek, which sometimes extends over the whole surface. Stalk an inch and a half long. Flesh yellowish, considerably firm, sweet, and agreeably flavoured. Middle of August. Tree very productive.

Large Black Bigarreau. See *Tradescant's Heart*.

LATE DUKE (*Anglaise Tardive*).—Large, obtusely heart-shaped, and somewhat compressed. Skin shining, of a fine bright red, which becomes darker as it ripens. Stalk one inch and a half to two inches long. Flesh pale yellow, tender, juicy, and richly flavoured. Beginning and middle of August.

Late Morello. See *Morello*.

Lemercier. See *Reine Hortense*. There is a Lemercier

grown by Mr. Rivers which is later than *Reine Hortense*, and, before it is quite ripe, considerably more acid than that variety. The tree has also a more rigid and upright growth, like the Dukes; but it is evidently a seminal variety of *Reine Hortense*, and, being a better bearer, is, perhaps, the preferable kind to grow of that admirable cherry.

Lion's Heart. See *Ox Heart*.

LOGAN.—Above medium size, obtuse heart-shaped. Skin deep blackish-purple. Stalk an inch and a half long. Flesh brownish-red, almost firm, juicy, sweet, and richly flavoured. Middle and end of July. The tree blooms late.

Louis XVIII. See *Reine Hortense*.

LUKE WARD'S (*Lukewards*).—Medium sized, obtuse heart-shaped. Skin dark brownish-red, becoming almost black as it ripens. Stalk about two inches long. Flesh half-tender, dark purple, juicy, sweet, and richly flavoured. End of July and beginning of August. Superior to the Black Heart and the *Corone*.

MAMMOTH (*Kirtland's Mammoth*).—Very large, often an inch and an eighth in diameter; obtuse heart-shaped. Skin clear yellow, flushed and marbled with red. Stalk an inch and a quarter long. Flesh half-tender, juicy, sweet, and very richly flavoured. Middle and end of July. This is a magnificent cherry.

MANNING'S MOTTLED.—Above medium size, obtusely heart-shaped, and flattened on one side. Skin amber coloured, finely mottled, and flushed with red, somewhat translucent and shining. Stalk slender, two inches long. Flesh yellow, tender, juicy, sweet, and richly flavoured. Middle of July.

Marcelin. See *Monstrous Heart*.

MARY (*Kirtland's Mary*).—Large, roundish-heart-shaped, and handsome. Skin very much mottled with deep, rich red on a yellow ground, and, when much exposed to the sun, almost entirely of a rich glossy red. Stalk from one inch and a half to two inches long. Flesh pale yellow, firm, rich, and juicy, with a sweet and high flavour. Middle and end of July. This is a very beautiful and very fine cherry.

MAY DUKE (*Duke; Early Duke; Early May Duke; Angleterre Hâtive; Royale Hâtive*).—Large, roundish, inclining to oblate. Skin at first of a red-cornelian colour, but gradually becoming dark red, and ultimately almost black, as it ripens. Stalk about an inch and a half long. Flesh red, tender, juicy, and richly flavoured, with a fine, subdued acidulous smack. Beginning of July.

De Meruer. See *Reine Hortense*.

Merveille de Hollande. See *Reine Hortense*.

Milan. See *Morello*.

MONSTROUS HEART (*Bigarreau Gros Cœret; Bigarreau Jaboulais; Bigarreau Gaboulais; Bigarreau de Lyons; Bigarreau Gros Monstrueux; Bigarreau Monstrueux de Mezel; Marcelin; Gros Cœret; Ward's Bigarreau*).—Very large, obtuse heart-shaped. Skin at first yellowish, tinged and streaked with red, but changing to a deep, shining red, and approaching to black the longer it hangs. Stalk one inch and a half to two inches long, stout. Flesh purplish, firm, and juicy, with a rich and excellent flavour. Ripe the middle and end of July.

Monstrueuse de Bavay. See *Reine Hortense*.

Monstrueuse de Jodoigne. See *Reine Hortense*.

(To be continued.)

DRESSING FLORISTS' FLOWERS.

I PERCEIVE, in your capital periodical THE COTTAGE GARDENER, the subject of dressing flowers for exhibition is now being canvassed, and I cannot refrain from sending a few of my observations on such a system. I will not say anything of the appearance of dressed flowers, further than they certainly look well for

a time; but, with regard to the exhibiting for prizes against cultivated flowers, I do think it unfair in more than one point of view. For instance, I attend a floral exhibition, and observing some very beautiful Dahlias, Chrysanthemums, &c., I note them down, colour and name, with any particular remarks. In course of time, I order of a first-class nurseryman, and pay a first-rate price for these said plants. Well, they arrive, are duly planted, and all the care possible given, to bring them to an exhibiting trim; but, to my no small disappointment, when the flower expands, I find it has no pretensions to be like the flower it was ordered from. As a matter of course, the nurseryman is blamed. Then the plant is shown to a grower, and he is told the tale of woe; when I am met by the reply, "O yes, the flower is quite true to name; but the one you ordered from was a dressed flower." Well, Sir, it was a dressed flower; and I have got what a schoolboy would call, "pretty well dressed, too."

I now ask the question, Is it fair to a florist?—is it fair to a nurseryman to be thus taken in? If such a system is to be allowed, let the public know which are the dressed and which the undressed plants, and let separate prizes be offered for each class. For my part, I look upon flower-dressing as a retrograde from the high cultivation of flowers. Being myself secretary to a country floral society, I can say I have had many remarks made on the system of dressing; and I hope at our annual meeting, in three weeks time, that our schedule will come out with a distinct class for the dressed and natural flowers. But I know it requires a general determination to carry out a plan of this kind, and, I may add, a more able person than myself to bring it before the public; but I feel your widely-circulated periodical has done and will do good, and, therefore, I have launched this letter, and only have to apologise for making it so long; but, unfortunately, I am not able to dress it.—L. R. L., *Louth*.

[We have always said, and we say again, that there is no fraud in dressing florists' flowers for exhibition, when it is publicly known that such dressing is permitted. Some persons most admire dressed flowers, whilst others prefer them in their natural form; and our correspondent is quite right in recommending separate classes for them.—EDS.]

QUERIES AND ANSWERS.

TROUBLESONE CHIMNEY FUNNEL.

"I am sadly troubled with a chimney attached to my boiler. It is a small, conical, copper boiler, and the chimney is of cast iron, about four inches diameter, and twelve feet high. I light my fire with a little coal, and then feed the same with cinders and coke mixed. A nasty fluid-like gas tar begins to ooze out of the joints in the chimney soon after the fire is lighted, and runs down the sides. As the pipe gets hotter, blebs form and burst, and cover my plants, which are near, all over. I have made the joints quite tight, and so got rid of this nuisance; but now it chokes up the pipe, and, consequently, I have no draught, and my fire will not burn. Can you tell me of anything I can do to prevent this? If I was to make a hole in the bottom bend of the chimney, would it have the desired effect? I forgot to say that the fire is fed from the top of the boiler, and the cinders often come up above the hole of the chimney."—C. E. LUCAS.

[Has your draught not been stopped by raising your cinders higher than the opening for the chimney? Of course, if that is done, the draught must be stopped, and not only so, but even when the cinders burn and get lower down, a part of them may have trundled into the pipe, and partly stopped it up. The smoke-pipe, or funnel, ought to have been at the top, instead of in the middle of one side. A four-inch iron pipe makes a very bad chimney. Such pipe is frequently rather rough inside, and the soot sticks to it like glue. We once had great trouble with such pipes: when coal was used, they got clogged almost directly, unless fire was used so strong as to burn all the soot, and thus waste fuel. From our own experience, we have a great objection to metal pipes for chimneys, unless considerably larger. We do not know the reason, but certainly neither tin nor wrought iron fill with soot like cast metal pipes. A hole in the bottom bend of the chimney would let the gas tar drop to the ground; and if a cap could be fixed there,—wide enough to enable you to insert a small round hoe, with a sufficiently long handle, so as frequently to scrape down the sides of the pipe,—there would

be little chance of want of draught, if the stove was not filled too full. Under similar circumstances, we lately advised having a small brick flue, two feet and a half long, from the furnace: on that a nine-feet-six-inch pipe was fixed and elevated; beneath it, a six-inch iron door was placed, so as to give ready access to the chimney; and a small damper in the flue regulated the draught. We have been told this has been no trouble since.]

STRAWBERRIES THROUGHOUT THE YEAR.

"Calling, on the 8th of December, at Roby Hall Gardens, the seat of T. E. Moss, Esq., I was rather surprised at seeing a quantity of ripe Strawberries (of average size), green fruit, and flowers, all on the same plants. It looked more like April than December, with them. The gardener told me that they would have ripe Strawberries every month in the year." — JOSEPH PRATT.

[Where there are means, and fuel is no object, there is not much difficulty in having Strawberries every month in the year. The chief difficulty is, to have fruit in such dull weather as we have lately had, that, tested by the palate, is at all worth the trouble and the expense. We used to prolong the natural season with *Eltons*, on north borders, assisted by *Alpines*, succeeded by a second crop from the early-forced ones: the latest of these, assisted in a pit, ripened in November and beginning of December. Small pots of *Black Prince* have fruited about Christmas and the new year. If the gardener at Roby Hall adopts any new or better plan, we, and many readers, would be obliged for a detail of the system followed. It is always creditable to be able to do such things, and the recording of it prevents many slow coaches settling down comfortably, thinking they are doing enough.]

HEATING BY HOT WATER IN PIPES.

"I propose erecting two houses, to be heated by hot water, and shall feel obliged by your advice on the following points:—Is it requisite that the cistern should be on a level with the piping? and may the piping be below the boiler? Shall I want a second cistern as a feeder? Will there be sufficient piping to keep up a temperature of 45° in winter, in the greenhouse?" —JOHN WATSON.

[We cannot be sure of your heating two houses, unless we understand their position. They might be heated separately by a T flow and return, with valves to permit of heating either house at will. We consider that your idea of heating from a common cistern is the simplest, and will be the cheapest, if you are satisfied with wooden plugs. The cistern might be placed in the house likely to want the most heat. You show in your sketch two pipes coming into the cistern from the boiler, but one, the flow-pipe, will be sufficient. You also show both flow and return pipes of each division connected with the cistern; but the flows only should be connected there. The return from both houses should go at once to the boiler, being joined by a small T socket joint, where most convenient. We are supposing, that, according to your idea, the cistern is elevated, and will now answer the questions proposed.

1. It matters little whether you raise your cistern above the boiler eighteen inches, as you propose, or double that amount, or more, if it be found necessary or more convenient. If your cistern is near the boiler, and that cistern placed in one of the houses, it would be advisable not to have it too small, so as to allow for the expansion of water. As already noted, it will require three holes for the size of pipes used:—one, the flow-pipe, always open; the others fitted with a wooden plug each, to allow the water to circulate in one or both houses at pleasure. The force of circulation can be easily regulated by these plugs.

2. It is not, therefore, necessary, that the cistern should be on the same level as the piping. The latter may be at any intermediate position between the cistern and the top of the boiler. It is not desirable that any pipes should be lower than the top of the boiler.

3. No second cistern will be required as a feeder, provided the main cistern is kept supplied with water. The pipes and boiler must always be full of water, if care is taken to prevent air lodging in the pipes, for, in that case, you will sooner burst the pipes than get the water to circulate. In such a case of a raised cistern, however low you bring your pipe down from it, provided

it is above,—*i.e.*, higher than the boiler,—if your flow-pipe from that point to the farther end of your house rose gradually a couple of inches, or even three, it would be all the better; and at that highest point, a small open gas-pipe should be fitted in,—the open end standing as high as the top of the cistern,—which will prevent air accumulating. It would be advisable that this open end of the air-pipe was taken through the house outside, as sometimes, when a strong fire was used, the steam and hot water might be thrown out in scalding drops.

4. Sufficiency of pipes.—In a house, span-roofed, 20 feet long, 10½ feet wide, 7 feet from the floor to the apex, and sides 3½ feet high, and, we presume, opaque,—the 50 to 60 feet, which you have to spare on one end and side, will be sufficient to keep the house at 45°, if the pipes are four-inch ones. If the sides of the house (the 3 feet 6 inches) had any glass, it would take all the piping to do so in severe weather. If it would have been equally convenient, it would have been better to take the piping right round the house, having the highest point and the air-pipe in the centre, from which point the pipe should fall gradually to the boiler. In the case of a greenhouse, where sudden heats are more wanted than in forcing-houses, three three-inch pipes would be preferable to two four-inch ones. But, if a person keeps his eyes on the heavens, the four-inch ones will heat soon enough.

5. We presume all the roof is to be fixed. We do not admire your ugly contrivances for ventilation. We would sooner have some sashes to move, or those small swing-lights at or near the level of the roof, instead of these dovecot-like things. Ventilators should also be fixed in the two ends; and, of course, there will be ventilators in both sides.

You give us no idea of judging of the position of the propagating-house (8 feet wide, 18 feet long); but if the two pipes are to be enclosed in a bed 3 feet wide, and covered with bricks, clinkers, and then ashes, and your house is high enough to resemble the greenhouse, or so as you can walk comfortably inside of it, you will not have enough of heat, if you commence propagating tender things very early. You would have plenty under your cuttings, covered with handlights, &c.; but, for fresh-potted things, your stage, or bed, would scarcely have enough heat. For propagating greenhouse or bedding plants, your means will be ample. For early, tender work, you had better have top as well as bottom-heat. As you say you cannot sink your boiler below 2 feet, you must keep this in mind in your propagating-house, so that the pipes there are not below the boiler. It matters not if they are several feet above it, if not quite so high as the supply cistern.

6. The west side is fair as to steepness. Is there any reason why the glass there should be 7 feet, and the east side 6 feet? We think we have noticed the matters referred to; but would be obliged to have all the questions stated in one place. A rough plan is very useful, but it takes up much time, when, before we can see all that is wanted, we have to refer backwards and forwards to several parts and sides of a letter.]

RENOVATING OLD VINES.

"I have an old viney—a very old and very deep border. The Vines are pretty good, planted outside, and taken in through pigeon-holes, about a foot above the border. The crop used to be miserable—scarce and poor. I could not very well spare the Vines, as I was doing away with them in another house. Two years ago, I got some fresh turf chopped up, and put against the bare stems. I very soon saw young roots working through the turf, and a great improvement in the Vine, and twice the number of bunches that I had the previous year; but shanked, as usual. Last year, I had some more fresh turf added, and continued improvement was quite visible in Vine and fruit; but still shanking. I have now young Vines established in other vineeries, and I will try what one will do, by taking all the border away, and cutting away all the roots, except those grown in the fresh soil and out of the once-bare stem. I have the border, or pit, clear now; the young roots tied up in straw and mats, to protect from frost. The pit is forty-two inches deep. I put one foot of broken stones in the bottom, six inches of coal cinders on the top of the stones, two layers of turf uncut, grass downwards, on the cinders; then a foot of turf, cut into pieces of two, three, or four inches; and then I spread the roots, and put a little leaf mould over them, half an inch deep, or thereabouts; and then fill up with broken turf, as before. I cover the whole with some short dung from the frames, to protect a little from frost. I do not

mean to force the Vines—merely to assist a little. I will prune severely. Will you say if I may expect to keep clear from shanking?"—P. P., *Malton*.

[We think you will be free from shanking for some time to come, and always, if you have secured drainage, and keep the roots enticed to the surface. If you have no drain, and neglect excitement to the surface, the roots in a few years may be induced to go through your ashes and stones in search of moisture. Had we been in your case, we should not only have saved the fine young roots, but also a good portion of the old, rather naked ones; as these, when raised to a higher level, in such fresh compost, would soon throw out fresh roots; and these, in general, are not so apt to get down as younger roots proceeding directly from the stems. We have little doubt, however, that the Vines will improve wonderfully.]

COX'S ORANGE PIPPIN.

AT the exhibition of fruit, in November, 1857, at Willis's Rooms, the Judges gave this Apple the first prize. Their opinion was impugned by your correspondent, "H.," in *THE COTTAGE GARDENER*, page 134; and the Secretary of the Pomological Society, without any knowledge of the circumstances under which the Judges gave their award, parrot-like, in his report of the Pomological Meeting, in October last, also questioned the soundness of the opinion passed by the Judges of the Apples at the above exhibition.

Your correspondent "I.," at page 214, has given most truthfully, all, or nearly all, that is necessary to be made public, about what occurred in 1857, in judging the Apples; but a few words in support of his assertions, although not required, may not be amiss.

In my official capacity as one of the Judges of the Apples, I looked over the enormous collection of fine fruit with dismay, for it seemed improbable we could finish testing them in time. We soon, however, came to a magnificent array of plates of *Ribston Pippins*. At once we agreed to make that kind a standard as to flavour. We accordingly tasted one or two from each plate, and selecting the best plate, placed it on one side to be referred to. I may here mention, that we did not find 'any quite up to their usual qualities: they were not so juicy as usual, and sweet only, without the fine aroma peculiar to the sort.

Some fine plates of *Cox's Orange Pippin* next attracted our attention. They were tasted, and found so tender in their flesh, so full of juice, with a fine rich aroma, that a plate was selected and placed by the side of our selected *Ribstons*. Many, very many, other kinds were tested, and found inferior to our two selected plates. Then came the grand and last test—the selected *Ribstons* and the selected *Orange Pippins*: there was not a moment's hesitation—the latter were found to be infinitely superior to our old and well-established favourite *Ribstons*, and the first prize was accordingly awarded. I happened to be one of the Judges of another department, in St. James's Hall, at the last fruit exhibition (November, 1858), and, having done my work, I was sauntering round the Hall, when I came up to the poor teeth-tired Apple-tasters. They were just then discussing the merits of *Cox's Orange Pippin*. I felt interested, and asked for a slice. Alas! how changed! My pet sort was merely a nice sweet Apple, not very juicy, and very much like the old *Golden Reinette*, in flavour. I next tasted a *Ribston Pippin*, and found it much superior. It will thus be seen, that the Judges in both cases were correct in their decisions. They were not led astray by any prestige, but gave the first prize to the best.

Inconstancy in the flavour of fruits is nothing new: it is *very rarely* that the same variety is of equal excellence in consecutive seasons. In the "good old times," the gardener did not send his *Crassane* Pears to his employer's dessert, if he found them of inferior flavour, but quietly threw them away. We manage these things differently now, and in annually tasting, exhibitions will, I think, in the end throw some light on this Pomological mystery—the cause of fruits from the same tree, and under the same culture, almost annually differing so widely in their flavour. Last summer seemed perfect as to its ripening power, and yet, out of some eight or ten plates of *Crassane* Pears, at the St. James's Hall Exhibition, scarcely one contained a fruit of good flavour—some were absolutely nauseous.

The numerous plates of *Winter Nelis* Pears were greatly inferior to their usual quality; and of *Gansel's Bergamot*—the

most delicious of our autumn Pears—I tasted many, and found them comparatively dry, and devoid of all their usual aroma.

As records will now be kept of these fluctuations in the flavour of fruits, to which end the reports of the British Pomological Society will largely help, we may one day find out the cause, and another day suggest a remedy for these discrepancies in the flavour of our garden fruits.—T. R., *the other Judge at Willis's Rooms, in 1857.*

In his communication which appeared in last week's COTTAGE GARDENER, "I, one of the Judges at Willis's Rooms, 1857," has put a construction on my notice of Cox's Orange Pippin which it does not bear. I do not impugn the judgment of the Judges at Willis's Rooms, for I think it very possible, knowing how variable the Ribston is, that the specimens of Cox's Orange Pippin exhibited on that occasion were superior to those of the Ribston Pippin, and, consequently, they judged rightly. But it is from the inference they drew from their decision, that I dissent; for, in giving forth the unqualified judgment they did, they plainly led the public to suppose, that Cox's Orange Pippin was unexceptionably superior to Ribston Pippin. I myself was told, without any qualification, that it was so; the daily newspapers reiterated it, and the public believed it. But, in dissenting from such an inference, I think it is too much for "I" to say, that I thereby intended "to convey censure on the men who conscientiously endeavoured to discharge the duty entrusted to them." It is a question of opinion; they gave theirs, and I have given mine, and both are to be estimated just for what they are worth; but it is a hard case, if, when one individual differs from another in a matter of opinion, he is to have improper motives attributed to him.

I allow that Cox's Orange Pippin is a first-rate Apple—I have ever been of that opinion; but I repeat that it is "neither superior nor equal to Ribston Pippin," and that there are many other Apples as good and better, as I have already said. I question not the decision of the Judges, that the specimens of Cox's which were exhibited at Willis's Rooms were better flavoured than the Ribstons exhibited on the same occasion; but, in drawing the inference they did, and in giving publicity to it in this single instance, I think they gave a hasty and unguarded judgment.

What was the case this season at St. James's Hall? Three dishes of Cox's Orange Pippin were exhibited from different growers, including the same gentleman who took the prize last year, and they were all beaten by Mr. Newton's Cornish Gilliflower. We all know that Ribston Pippin is very variable in its quality, and that there are seasons and localities where it succeeds better than in others; but, if we are fairly to test the merits of the two fruits, let us take both in their best state, and then form a judgment. It was not merely in stating that Cox's was superior to Ribston that I think the Judges erred in coming to the conclusion they did, but in thereby conveying the idea that Cox's Orange Pippin is so superior to our best Apples; for, in general estimation, the Ribston Pippin ranks so high, that any variety which surpasses it must be something very extraordinary indeed. Before we can say that any one fruit is superior to another, we must see both in their best condition, and judge them together under such circumstances; but to judge an inferior Ribston Pippin with a Cox's Orange Pippin in its highest state of excellence, and from the comparison to publish the conclusion that the former is the superior variety, is, I still think, unguarded. I may mention, in support of my opinion, that the Pomological Society has this season decided, at a very full meeting, that Cox's Orange Pippin is not superior to the Ribston Pippin.—H.

CULTURE OF THE HYACINTH.

We have long been taught to believe, that nobody can grow a Hyacinth but a Dutchman. Now, there are very few things that an Englishman cannot do, if he sets about it, and I have scarcely a doubt but that as good bulbs may be produced in the market gardens of London as among the dykes of Holland—nay, it was done by an old gardener (Justice) before we were born. The fact is, that, though we are fond of flowering this plant, we never think of cultivating it. We sometimes plant a bed of fresh roots from the shop in the open ground. These flower nobly the first year—merely, however, throwing up, half-mechanically, the flower which the skill and industry of the Hollander had caused to fatten and ripen within the bulb the year before. Upon

making inquiries as to the second year's show of bloom, our informant is generally silent, or shirks the subject with a low growl. The fact is, that the Hyacinth, like the Carnation, is an instance of a plant in which the improvement of race by high cultivation has been carried to the utmost; and by high cultivation alone can such plants be kept up to the mark. I turned my attention to this plant, some years ago, for several seasons, and saw quite enough to convince me that the culture was to be done.

In my experiments, I followed implicitly the practice of the Dutch, as described in the books,—to wit, by excavating the border, placing a few inches of well-made, rather rotten manure at the bottom, and filling up to the surface, and six or eight inches above it, with a carefully-made and very sandy compost. In my own case, this was the soil shaken from the roots of Geraniums and other plants at potting time, and collected expressly for the purpose. I found it indispensable that the plant should be cultivated from the offset. Every offset, however small, should be planted and shifted to fresh quarters every year. They will attain a good size for blooming in from two to three seasons, according to their strength when planted. They may be allowed to remain two years following in the same bed, but it is hardly safe practice—at least, not in the midland counties.

The young stock, to commence with, may be supplied from pot plants of the preceding season, which frequently produce a large number of offsets; and, according to my experience, this is far the best way to begin. In practice, the system is not so complicated and troublesome as it seems. A bed of this kind, after its crop of bulbs, will grow Carnations well for a season, or perhaps two, or Anemones, which will thrive under this treatment. Three or four small beds, running up to a south wall, or other good exposure, will admit of a simple rotation that no good gardener would think troublesome. Moreover, the amateur will find it pay to concentrate his attention for a year or two upon one small space of ground thoroughly well cared for.

I omit smaller details in the present flourishing state of gardening knowledge. It is sometimes recommended to omit the substratum of manure, as being too stimulating. The Dutch use it very strong—I believe, always in the shape of night-soil.

By the method above described, I grew many sound, clean-skinned bulbs, resembling imported specimens, and some quite as good as the ordinary run. The large, handsome, single whites thrive like Daffodils. I remember, also, the single yellow Heroine; the blue Nimrod; the very dark purples, both single and double; and the pretty and curious L'Unique—all doing kindly, and making clean bulbs. Avoid very double and very late flowering sorts, and take the bulbs up rather early—that is, before the foliage is utterly dead, laying them in by the heels in a dry place for a week or two before cleaning and housing them. If you keep them in a cool place, such as a dry cellar, or apple-room, they will tell you themselves when they want to be planted, by the appearance of the ring from which the rootlets spring; and this begins to show life long before the uninitiated would think it.—AMELLUS.

BEEs SECRETING WAX.

THERE are certain scientific truths,—such as the identity of lightning with electricity, and the circulation of the blood,—which, owing their discovery, in the first instance, to the genius of an individual, have been so often verified by others, and are so consistent with the phenomena* which they profess to explain, that no one at this time ever thinks of doubting them, or deems it necessary to repeat the experiments by which they have been demonstrated. Most persons would be surprised at finding a Fellow of the Royal Society denying the conclusions of Franklin, in the one instance; or a member of the College of Surgeons disputing the correctness of Harvey's reasoning, in the other; and it is with somewhat similar feelings that I have perused the doubts of Mr. Wighton, respecting Huber's discovery of the secretion of wax by bees, from either honey or sugar. As that gentleman professes himself acquainted with the experiments of the great apianist discoverer, but remains unconvinced by them, I fear it may be deemed presumption in me to attempt carrying the argument further. I would remark, however, with reference to the passage he quotes from his own work, that Huber destroyed the new combs so often, and they were so frequently reproduced, whilst the bees had access only to honey, in the one experiment, and to sugar in the other, as, in my opinion, to do away with

the possibility of the whole being formed from wax "collected before their imprisonment." Mr. Wighton also says that he has never heard of wax "being distilled in the substance of honey," and hazards the hypothesis, that it "may form one of the constituents of sugar, though it does not of honey." Will he excuse my asking him, if he has ever heard of any one of the numberless *animal* secretions that exist having been perfectly reproduced either by distillation or any other artificial means? What grounds, also, can be shown for the supposition that wax may exist in sugar—a substance artificially produced, and never presented to bees (in this country, at least) in their natural state—and not in honey, when the principal constituents of all three—sugar, honey, and wax—are identically the same—viz., hydrogen, carbon, and oxygen.

That bees-wax is, in fact, an animal secretion, is sufficiently demonstrated by Oppermann, by whom it has been proved that pure vegetable wax differs from bees-wax in the ratio of its elements.

If additional evidence be required, it may be found in the pages of F. W. Gundlach, who appears almost to rival his great predecessor Huber, in habits of patient research and laborious investigation. He remarked, that when wax was secreted from sugar there appeared "some imperfection in the process, as the laminae did not fall off, but adhered to the succeeding ones." He also says, that "from an ounce of wax, bees can build cells enough to contain a pound of honey." A very elaborate experiment, made for the purpose of ascertaining "how much honey bees require to form wax," resulted in proving a fact of much importance to all bee-keepers—viz., that "to form a pound of wax, twenty pounds of honey are required!"

A circumstance also recurs to my recollection, which appears so conclusive, that I may be excused for relating it. Early in February, 1850, I inspected a stock hive, whose inhabitants had recently perished by starvation. I was informed, that either late in December, or early in January, the hive had been blown down, and the combs knocked out. They were, however, replaced, and duly refixed by the bees; but what struck my attention most, was, that in the vacant space between the top of the hive and the combs, caused by the latter resting on the floor-board, a number of new pieces of comb had been constructed, whose virgin purity contrasted strongly with the blackened appearance of the more ancient ones, which they surmounted. Bearing in mind that these structures were reared in the depth of winter, when the inclemency of the weather must have kept the bees prisoners, and when, also, there was nothing abroad for them to gather, it appears to me perfectly certain, that the store of honey within the hive had been exhausted in secreting wax for these necessary works, and that the famine which ultimately overtook the little labourers had been hastened, if not entirely produced, by this cause. M. Duchet relates a somewhat similar instance in his "*Culture des Abeilles*," from which he draws the same conclusion.

I can fully corroborate what Mr. Wighton says has been already stated by my friend, Mr. Taylor, respecting the number of bees to be seen during spring and summer on the young leaves of the Laurel, and fancy I can solve the mystery. At the back of every Laurel leaf, near its base, and on either side of the midrib, may be found two or three small glands, by which, whilst the leaf remains young, a luscious fluid is continually secreted. As winter approaches, this secretion ceases, and the glands appear only as brown spots. It is this exudation which the bees so perseveringly collect, *by licking, not scraping*, and which I believe to be much more nearly allied to honey than to wax, and only capable of being converted into the latter in so far as its saccharine character may admit of its being secreted in the wax pockets of the bee.

On examination, I find that the opinion that wax is ejected from the mouth of the bee was very general when wax was believed to be extracted from pollen. Both these notions appear to have been exploded about the same time, and I have a strong impression that future observation will satisfy Mr. Wighton that one is as erroneous as the other.

I have always regarded the division of working bees into two classes as being, probably, rather fanciful than real. At the same time, I should be slow in pronouncing it absolutely untrue, without investigating, and, if possible, repeating the experiments on which the supposed distinction is founded.

My proposition for trying waxen plates as a substitute for artificial comb was based on the assumption that the latter had been successfully made use of. If it should turn out that the whole affair has no more substantial foundation than the imagination

of one of our Transatlantic cousins, no one will be less surprised than—A DEVONSHIRE BEE-KEEPER.

P.S.—If Mr. Wighton's aparian work is still in print, I should be obliged by his favouring me with its title, and the name of his publisher.

I AM one of those who, in common with a "DEVONSHIRE BEE-KEEPER," were rather startled at Mr. Wighton's statement respecting bees collecting wax from plants." It may, indeed, be true, that "the theory that wax is secreted from *honey* in the stomach of the bee has never been clearly established,"—i.e., so clearly established as to be beyond the possibility of a doubt,—although the result of Huber's experiments, joined to what most intelligent apiarians have observed themselves, goes far, in my judgment, to prove that wax is "a secretion," formed between the plate-rings of the abdomen of the insect, and not a foreign substance, collected from plants or elsewhere. Anyhow, Mr. Wighton, as it appears to me, has advanced nothing beyond the merest conjecture, in refutation of the old belief of apiarians, from Huber downwards. For instance, as to the Laurel and other such plants, it is no doubt true, that bees are often seen hovering about their tender shoots in spring and summer, and scraping something of a gummy nature therefrom—but, is this substance *wax*? Is it not rather a something highly aromatic and resinous, which wax is not, and more likely, therefore, to be *propolis*? Besides, if wax be collected from the Laurel, how is it one sees so very few bees (comparatively) collecting it, or from any other trees or plants of a similar nature?

Then, again, where do the bees stow away the wax? Not, certainly, on their thighs; nor has any one yet seen them packing the wax, thus collected, between the rings of the belly, or elsewhere. Besides, it remains to be proved that either wax or propolis are found on plants at any other season than the height of spring, or summer, or autumn; whereas, if you give bees honey, or food of any kind containing sugar, in sufficient quantities, at any season of the year, excepting in severe frost, they will make comb.—B. AND W.

PRESERVING TOADS.

LEAVING to my friend Mr. Wighton to remark upon that part of "BUFO's" inquiry which relates to ants, I take up the other portion about toads. I have had a great deal of experience with these reptiles, having made pets of them for several years. I have kept them through the winter, and observed most of their habits. It is true that they must not be exposed to severe cold, but on the other hand they must not be kept warm. Toads feed freely till the latter part of November; then they go into winter quarters, where they remain till the breeding season, in February, or March, according to the temperature. They require no food all this time. One that I kept refused food from November 22 till February 3. He then took two or three flies, and no more till March 13, when he took food as usual. My tame toads have always been kept in a large glass made on purpose, and remained through the winter in the parlour, where a fire was constantly kept up, except during the night. They were placed, however, at a distance from the fire, in the darkest and coolest corner of the room.

"BUFO" must bear in mind, that toads in their natural state bury themselves during winter in the ground, and often in dung-hills. They require, therefore, protection from severe cold; but too much warmth would be opposed to their natural crisis of hibernation. I have found them do well in a glass, or jar, with plenty of moss to burrow under. They will lie thus, with little motion, all through the winter. They do not want moisture like frogs: they rather love dry places, and do not go near the water, except at the breeding season in the spring.—F. C. HUSENBETH, D.D.

ANTS ON PEACH TREES.—During my long practice of forcing Peaches, I never observed their blossoms injured by ants, as noticed by "BUFO," at page 184. In general, ants hunt about the trees after insects, which they carry off to their nests; also, the sweet deposits of insects on the leaves, resembling "honey dew." Too much traffic, however, of ants, is injurious to plants. And they are also fond of soft, ripe fruit, and must be kept within bounds. I do not know of any better remedies than those already advised for "BUFO."—J. WIGHTON.

TRADE LIST RECEIVED.

A Catalogue of Select Vegetable, Flower, and Agricultural Seeds, for 1859 (by William Cutbush and Son, Highgate near London), contains a choice selection of these articles, and such as Mr. Cutbush can personally recommend.

“LAWSON’S GARDENERS’ KALENDAR.”*

THIS welcome broadsheet continues to make its appearance with the almanacks. It is this season illustrated with a view of the conservatory at Killikee, and, besides the usual information contained in almanacks, it contains very much that is altogether different from what has appeared in former years. We have this season a list of all the foreign moneys, weights, and measures, and some admirable instructions in meteorology, a subject in which the gardener is particularly interested, and that with which gardeners generally are, perhaps, least acquainted. The “Kalendar” is admirably got up, and will prove, not only an useful, but an ornamental appendage wherever it is introduced.

WEATHER IN 1858, AT TROWBRIDGE, WILTS.

As some of your readers may wish to compare notes with others in a different locality, I have made an attempt to give an idea of the temperature during the past year. I doubt whether you, or your readers, may be able to make out anything satisfactory. Nevertheless, I thought I would send it, such as it is, hoping that you, or some one else, would point out some more intelligible method for the present year:—

	Amount of rain that fell in each month.	Number of days that rain or snow fell.	Self-regist. Thermom.		
			Highest temperat. during the month.	Lowest temperat. during the month.	Frosty nights in each month.
1858.	Inches.		Day.	Night.	
January	0.40	9	53°	20°	16
February.....	0.81	10	51	20	19
March.....	0.75	13	65	16	15
April	1.18	14	71	26	2
May	1.92	15	80	34	—
June	0.96	6	89	48	—
July	2.08	11	83	43	—
August	1.61	8	84	42	—
September ...	2.50	12	74	39	—
October	3.0	14	63	29	3
November ...	1.60	10	52	20	17
December ...	2.70	16	50	27	5
Total....	19.51	138	...	...	75

The columns of the amount of rain, the number of days that rain fell, and the number of frosty nights, you will, perhaps, understand. But the other two I will just say, that it means the highest point the thermometer reached during the month, in the day and in the shade, and the lowest point during the night. The past year has been unusually dry, as will be seen—only 19½ inches for the whole year. June was the hottest month. I see, by reckoning up the degrees for May, June, and July, they stand thus—

	Day.	Night.
May	1976	1349
June	2299	1617
July	2193	1616

So that June, although a day less, was considerably warmer than either. August approached very near to June, by day, but not so warm by night, as either June or July. The hottest day was the 15th of June, and the succeeding night the thermometer remained at 65°. The coldest night was the 10th of March. November was very severe—from the 18th to the 25th we had 50° frost; the 23rd and 24th were 12° each, which sealed the fate of all flowers, except a bed of Pompones, which were in pots. Those in the borders were done brown. December was the most uniform temperature throughout the year. The day temperature ranged within 10°, with one exception.

Although we have had a very dry season, flowers have done remarkably well. The bloom has not been so profuse as in

* Peter Lawson and Son, George IV. Bridge, Edinburgh, and 27, Great George Street, London.

some past seasons; but they held out well, and showed to advantage, there being no rain to injure the blossom.

Last year, I took up about a dozen roots of the yellow Calceolaria, with a good ball to them, and kept them in pots and a calico-covered pit till planting-out time. I then put them into a bed, which they just filled, and they were better than any I ever had. Not the least portion died off, as they very often do, if not altogether. Others that I had—both autumn and spring-struck cuttings—have gone off like those of other people.

I have this season taken up all the best in growth, and placed them in the same pit, covering the balls with coal ashes, instead of putting them in pots, just to try the experiment. At the present time they are all right.—THE DOCTOR’S BOY.

TO CORRESPONDENTS.

MELONS (*Rosa*).—The *Bromham Hall* and *Beechwood* are good varieties. The *Egyptian* is an excellent kind for small families, being of less size. You will see an enumeration of good Cucumbers in another page. The time for sowing depends upon the time you require the fruit. Refer to any work on their culture. Buy our “Garden Manual,” which gives every information on such routine points.

HOLLY CUTTINGS (*A Novice*).—Novices will never do any good in attempting to get Hollies from cuttings, as long as they are novices. The very highest degree of skill in propagation is necessary—essentially necessary, to enable anybody to root one Holly cutting out of 500. But the time and mode are these. The whole month of September is the time; the cuttings must be the young tops of that season, cut to where they are just one-half ripe, and no more or less; they are trimmed of their bottom leaves nearly two inches, and then put in like Heath cuttings, very firmly, in pure white sand, and sandy loam below, on a border in a north aspect. They are then covered with a close handglass, and attended to with water, airing, clearing, and keeping tidy, just like Heath cuttings. In twelve months they root, and in twenty-four months they may be removed from the striking-place, and in three or four more years they are fit to plant out for good; but they are very small. About ten years after putting in the cuttings, they are nice, portable plants, for all garden purposes.

APHIDES ON MANDEVILLEA (*R. G.*).—See an article on “Little Matters,” lately. If the *Mandevilla suaveolens* was so covered with aphis, one washing would not destroy them. There would be young ones, and eggs innumerable, beyond your reach. You had better smoke the house with tobacco, taking care that the smoke is presented in a cool state. Very likely you may require to do this two or three times, whereas, if the first aphis seen had been attended to, you might have saved nearly all the trouble. You may safely prune back the Mandevillea to within a bud or two of the base of the shoots made this season; and if the roots and stem are right, the young growth will come away strong in March and April.

NAME OF ORCHID (*M. M. Morland*).—If you send a single bloom in damp moss, and in a box, so that the post-office stamp does not crush it, we shall, probably, be able to tell its name. We are inquiring about some one to suit you.

STORING APPLES (*F. D. A.*).—All fruit keeps indifferently everywhere this year; but your room is too warm, we should say. You gathered your fruit in the right state. Mr. Errington wrote very fully, recently, upon fruit and fruit-rooms.

BAR AND SLIDE HIVES (*T. W. W.*).—The gentleman you mention no longer belongs to our staff. We are trying the hives, and shall be able to give some information this year.

ACHIMENES (*Kate Karney*).—You will find full particulars, as to culture, &c., in the last volume, which you surely could not have seen, and in many volumes beside. There is no *Pydeas*, but there is a tallish section of Achimenes, called *Tydea*. In your circumstances, you should get all the bulbs at rest before November, and start them in March or April, as you have heat. You cannot keep them growing in greenhouses in winter. Examine your plants, and if they have fair tubers, let them dry up. If the tubers are spongey and small, let the plants alone until you can command bottom heat; then cut them over, and start afresh, without re-potting.

NAMES OF PLANTS (*A Subscriber*).—Your specimens are very diminutive. You might have sent a tip of a shoot, with its leaves and flowers, instead of a single leaf or solitary flower, which are not enough for us to be certain in determining the species. We believe No. 1 is *Daphne Dauphinii*, one of the best of the Daphnes for training upon the open wall, or as a pot plant for the conservatory. No. 2 is *Cacalia articulata*, an old greenhouse plant, which is often called the *Candle Plant*. (*G. P.*).—Your Ferns are—1. *Phlebodium sporadocarpum*, often called *P. glaucum*. 2. *Athyrium filix-femina*. 3. *Lastrea elongata* of some botanists, *Tephrodiun* of others; and it has been called *Aspidium elongatum*. 4. *Pteris serrulata*. The leaf sent with the above is from the *Erythrina crista-galli*, an ornamental stove plant.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JANUARY 18th, 19th, and 20th. CHESTERFIELD AND SCARSDALE. Secs., W. M. Hewitt, and J. Charlesworth. Entries close January 4th.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Pitman, Esq.

N.B.—*Secretaries will oblige us by sending early copies of their lists.*

DISCOURSIVE POULTRY PAPERS.

WISHING to give every information in our power on poultry matters, we purpose, at times, to devote part of our space to general subjects connected with them. We believe that such will be acceptable to many of our readers, who, although non-exhibitors, are not the less interested in every detail, seeing that, even if fowls are not pets, they are not without importance to every resident in the country. They supply many delicacies for the table; from the spring chicken—which comes in as a *bonne bouche* with Asparagus—to the egg which appears daily at the breakfast-table. Sometimes, in the course of our peregrinations, we have found a cottage where no fowls were kept. We confess there are few such now-a-days. When we have asked, why there were none? we have been told the expense was so great. As we mean these papers to be familiar, chatty ones, we do not profess to observe strict order, and shall meet objections, or make observations, as they occur to us.

One remark, then, on the question of feeding. There is no house where there are not scraps enough to play an important part in feeding a moderate number of fowls. There must be crumbs at the bottom of bread-pans. Toast and water will be wanted sometimes. Crusts are cut off toast; and even where the most rigid surveillance is observed there will be scraps of bread. Children are great friends to fowls, in this respect, and the hog-tub (excuse the expression) is a great enemy. We are far from being haters of pigs. We respect them; but the scraps that are thrown into their tub, and which are nothing to their “unbounded stomachs,” would keep a walk of fowls. We want, then, a pan for the fowls, as well as a tub for the hogs. In it should be put every crumb and morsel of bread, shreds of cooked meat; groats that have been used for gruel; cooked potatoes; and, in wet weather, and during easterly winds, the drainings of the beer glasses. If this is carefully carried out, even the thrifty housekeeper will be surprised to find how many things there are in a house, that are utterly useless for any other purpose than feeding fowls or pigs. Perhaps some one may say, “Ah! all very well, but we have nothing we could give to fowls in our house.” With their permission, we will try an anecdote, by way of illustration. Having said that fowls may be kept where there is nothing to give to them,—according to some opinions,—we will show how an excellent soup may be made with “flint stones.”

A curate in France was going his rounds, when he found in a cottage a woman in deep distress—“What is the matter, asked he?”—“My children are starving, and I have nothing to give them.”—“Nothing?”—“No, Sir, nothing!”—“Your pot is not on the fire.”—“I have nothing to put into it.”—“Come, let us try?”—“It is useless!”—“Put it on, fetch me four flint stones, and wash them thoroughly?”—“Ah! Father, do not mock me!”—“I am not mocking you, my good woman; do as I bid you.” The pot was put on, and the flint stones in it. “Now, have you two or three carrots?”—“Only those old dry ones.”—“Never mind, they will do. Put them in the ashes, and burn them a little. Now take them out and scrape them. Brush off the dirt. Put them in: they give flavour and colour. Only three potatoes! Pare them and put them in. How lucky! just half a tea-cupful of flour; no use to bake, but just enough to thicken; and a little morsel of dripping. Now keep it simmering. Ah! you little rogues (to the children) you smell it, and it is good. Now, poor woman, serve it out, and recollect another time how to make flint soup; all these little nothings, put together, have provided a meal.” The same may be said in many houses where there is not a scrap available for chickens.

It is not necessary they should be always suffering from repletion: they require exercise, and the food they earn is better for them, than that they get without effort. Neither is it necessary they should be always fat. Fat birds are not the best breeders, nor do they produce the best stock. We shall have to do with fattening hereafter. Fowls in high condition, should, in plumage, look like Pheasants and Partridges—close, firm feathered, and bright eyed, and sharp in search of food. As they are not brought up to seek their food entirely, and as every place does not afford it, they require some help; but this should be given sparingly. A fowl that is fed as long as it can pick up a morsel, three times per

day, is, in reality, being fattened. It is being spoiled as a stock fowl, and two-thirds of the food are wasted. All poultry, by nature, are clever at seeking food, and nothing sharpens the instinct so much as necessity. But the economy of food is not the only advantage of moderate feeding—the numberless stones they pick up are indispensable to their health, not only because they induce exercise, but because they are their natural food.

If fowls are to be kept healthy, they should be kept hungry, sufficiently so to make them watch anyone who intrudes on their haunts, to see if they bring them food; and when any is thrown down, there should be a race among them to pick it up, and if they will not run for it, they do not want it. Fowls, to do well, should be in the same condition as a greyhound, trained for running—full of good hard muscle, and with eyes bright and prominent; but, to a casual observer, rather thin.

(To be continued.)

CRYSTAL PALACE POULTRY SHOW.

JANUARY 8TH, 10TH, 11TH AND 12TH.

THE period at which we go to press precludes anything like a regular report of this great Show: we promise it, however, next week. In our desire to afford, not only the most accurate, but the earliest information to our readers, we append to the prize list a few hurried notes. This may now fairly rank as the second Exhibition in England, Birmingham alone surpassing it; and the entries show, to use familiar phraseology, that it is a good second. A feature that will be noted with pleasure by those who take interest in these Shows, is the dissemination of the prizes: they again go through the length and breadth of the United Kingdom, and we have once more to record the accession of new names among the prize-takers.

The *Dorkings* surpassed themselves. The *Spanish* showed visible improvement. The adult Buff and Cinnamon *Cochins* were better than the chickens. The *Hamburgs* were numerous in every class, and perfect pens were to be found in each. The *Game* were, as they have been everywhere, all that could be desired. We speak without hesitation when we say, the Golden Sebright *Bantams* were the best class we ever saw: the *Game* were also beautiful. The *Polands* were numerous, and excellent. The *Malays* and *Brahmas* have made this Show their especial battle-field, and the entries were numerous. The *Turkeys* were marvellous. The *Rouen Ducks* are gaining weight, and the *Aylesburys* were among the heaviest of the season.

SPANISH.—First, Mrs. J. C. Hall. Second, G. Botham. Third, J. K. Fowler. Fourth, H. F. Wells. **Hens.**—First, C. T. Nelson. Second, H. Whittington. **Chickens of 1858.**—First, Miss M. L. Rake. Second, J. R. Rodbard. Third, Mrs. J. C. Hall. Fourth, C. T. Nelson. **Pullets.**—First, J. K. Fowler. Second, J. R. Rodbard. **Cock.**—First, Miss M. L. Rake. Second, H. F. Wells. Third, J. K. Fowler.

DORKING (Coloured).—First and Second, Hon. W. W. Vernon. Third, J. Robinson. Fourth, C. Puncard. **Hens.**—First, G. Botham. Second, Capt. W. Hornby, R.N. **Chickens of 1858.**—First, J. Lewry. Second, W. Joshua. Third, C. H. Wakefield. **Pullets.**—First and Second, J. Lewry.

DORKING (White).—First, J. Robinson. Second, Capt. Beardmore. **Chickens of 1858.**—First, J. Keable. Second, J. Robinson.

DORKING COCKS (Coloured and White).—First, H. Townsend. Second, J. Robinson. Third, J. Lewry.

COCHIN-CHINA (Cinnamon and Buff).—First, H. Tomlinson. Second, D. S. Moore. Third, T. Stretch. **Chickens of 1858.**—First, T. Stretch. Second, Miss V. M. Musgrave. Third, Rev. G. Gilbert.

COCHIN-CHINA (Brown and Partridge-feathered).—First, D. S. Moore. Second, J. Busst, jun. Third, J. Cattell. **Chickens of 1858.**—First and Second, T. Stretch. Third, C. Puncard.

COCHIN-CHINA (White).—First, W. Copple. Second, C. R. Titterton. **Chickens of 1858.**—First, W. Copple. Second, G. Lamb.

COCHIN-CHINA COCKS (Coloured and White).—First, W. Dawson. Second, R. E. Gibbs, jun.

BRAMMA FOOTRA.—First, G. Botham. Second, R. Teebay. **Chickens of 1858.**—First and Second, G. Botham. **Cocks.**—First and Second, J. H. Craigie.

GAME FOWL (White and Piles).—First, Rev. G. S. Cruwys. Second, S. Matthew. Third, T. Whittaker. **Chickens of 1858.**—First, J. Camin. Second, F. Sabin. Third, J. Monsey.

GAME FOWL (Black-breasted and other Reds).—First, G. W. Moss. Second, W. Ballard. Third, W. H. Swann. **Chickens of 1858.**—First and Second, Dr. R. R. Sewell. Third, G. W. Moss.

GAME FOWL (Blacks and Brassy-winged, except Greys).—First, II. Parry. Second, Rev. G. S. Cruwys. Third, W. Ballard. **Chickens of 1858.**—First, N. M. de Rothschild. Second, W. Ballard. Third, W. Dawson.

CAME FOWL (Duckwings and other Greys and Blues).—First, J. Don-

ester. Second, Miss Reynolds. Third, W. Ballard. *Chickens of 1858.*—First, J. Doncaster. Second, G. E. Attwood. Third, J. Felgate.

GAME COCKS.—First, E. Archer. Second, J. Bradwell. Third, Hon. W. W. Vernon.

HAMBURGS (Golden-pencilled).—First, W. C. Worrall. Second, C. R. Titterton. Third, W. Pierce. *Chickens of 1858.*—First, W. C. Worrall. Second, R. R. Clayton. Third, J. Martin.

HAMBURGS (Silver-pencilled).—First, E. Archer. Second, G. Griffiths. Third, J. Bennett. *Chickens of 1858.*—First and Second, E. Archer. Third, T. Keable.

HAMBURGH COCKS (Gold or Silver-pencilled).—First, J. Martin. Second, W. Bennett.

HAMBURGS (Gold-spangled).—First and Second, W. R. Lane. Third, I. Davies. *Chickens of 1858.*—First, W. C. Worrall. Second, W. R. Lane. Third, G. B. Chune.

HAMBURGS (Silver-spangled).—First, H. Carter. Second, W. Pierce. Third, J. B. Chune. *Chickens of 1858.*—First, J. Camm. Second, G. Chadwin. Third, R. Teebay.

HAMBURGH COCKS (Gold or Silver-spangled).—First, W. C. Worrall. Second, W. Cox.

POLISH FOWL (Black, with White Crests).—First, T. Battey. Second, J. Dixon. Third, G. Ray.

POLISH FOWL (Gold).—First and Third, J. Dixon. Second, G. C. Adkins.

POLISH FOWL (Silver).—First and Second, J. F. Greenhall. Third, Mrs. Pettat.

POLISH COCKS.—First, G. C. Adkins. Second, J. Crane.

MALAY.—First, R. W. Fryer. Second, W. Rumsey. *Chickens of 1858.*—First, W. Hill. Second, S. Saunders.

ANY OTHER DISTINCT BREED.—First, C. R. Titterton. Second, Mrs. F. Walker. Third, W. Dawson. Fourth, C. Coles.

BANTAMS (Gold-laced).—First, C. Punchard. Second, Rev. G. S. Cruwys.

BANTAMS (Silver-laced).—First, M. Leno, jun. Second, Rev. G. S. Cruwys.

BANTAMS (White).—First and Second, C. R. Titterton.

BANTAMS (Black).—First, G. Finch. Second, N. Sykes, jun.

BANTAMS (any other variety).—First, Master W. Griffiths, jun. Second, J. Monsey.

GEES (White).—First, J. K. Fowler. Second, T. Williams.

GEES (Mottled and Grey).—First, J. K. Fowler. Second, T. P. Edwards.

DUCKS (White Aylesbury).—First, J. Weston. Second, Mrs. Seamons. Third, Mrs. H. Fookes.

DUCKS (Rouen).—First, C. Punchard. Second, J. K. Braikenridge. Third, W. G. K. Brevington.

DUCKS (Black).—First, J. K. Bartrum. Second, C. Ballance. Third, Miss S. Perkins.

DUCKS (any other variety).—First and Second, S. C. Baker. Third, J. H. T. Bayley.

TURKEYS.—First, Rev. T. L. Fellowes. Second, Mrs. Moorsom. Third, W. Dolby. *Poults of 1858.*—First, W. Dolby. Second, Rev. T. L. Fellowes. Third, Mrs. C. Marshall.

PIGEONS.

POWTERS OR CROPPERS.—First, W. Smith. Second and Third, G. C. Adkins. **Hens.**—First and Third, W. B. Date. Second, W. Smith.

CARRIERS.—First, G. Crocker. Second, B. Newberry. Third, T. S. Southwood. (The Judges consider this to be a very first-rate class, with a few exceptions.) **Hens.**—First and Second, T. S. Southwood. Third, G. Morgan. (This class is also highly commended.)

ALMOND TUMBLERS.—Silver Cup and Second, G. Smith. Third, C. G. Hill. Fourth, E. R. Maddeford.

DRAGONS.—*Blue.*—Prize, T. S. Southwood. (A very good class.) Any other colour.—Prize, F. G. Stevens.

SHORT-FACED MOTTLES.—*Black.*—Prize, G. Smith. *Red.*—Prize, E. R. Maddeford. *Yellow.*—Prize withheld.

SHORT-FACED BALDHEADS.—*Black.*—Prize, S. Millin. *Blue.*—Prize, F. C. Esquillant. *Red.*—Prize withheld. *Silver.*—Prize, G. Goore. *Yellow.*—Prize withheld.

SHORT-FACED BEARDS.—*Black.*—Prize, F. C. Esquillant. *Blue.*—Prize, Master M. Rake. (This class commended.) *Red.*—Prize, W. J. Woodhouse. *Silver.*—Prize, F. C. Esquillant. *Yellow.*—Prize, F. C. Esquillant.

SHORT-FACED TUMBLERS.—*Black.*—Prize, F. C. Esquillant. *Blue.*—Prize, W. Smith. *Red.*—Prize, J. Percivall. *Yellow.*—Prize, C. Esquillant.

JACOBINES.—*Black or White.*—Prize, E. R. Maddeford. *Red.*—Prize, E. R. Maddeford. *Yellow.*—Prize, E. R. Maddeford.

OWLS.—*Blue.*—Prize, G. Morgan. *Silver.*—Prize, G. C. Adkins. *Yellow.*—Prize, F. G. Stevens. *Black or White.*—Prize, S. C. Baker.

NUNS.—*Black.*—Prize, E. R. Maddeford. *Red.*—Prize, J. W. Edge. *Yellow.*—Prize, J. W. Edge.

TURBITS.—*Blue.*—Prize, H. Morris. *Red.*—Prize, H. Morris. *Yellow.*—Prize, E. R. Maddeford. *Black, or any other colour.*—Prize, G. Smith.

FANTAILS.—*Black.*—Prize, G. Goore. *Blue.*—Prize, G. C. Adkins. *White.*—Prize, Miss J. Milward.

BAEBS.—*Black.*—Prize, S. C. Baker. *White.*—Prize, J. H. Craigie. *Yellow.*—Prize, E. R. Maddeford. *Red, or any other colour.*—Prize, P. H. Jones.

MAGPIES.—*Yellow.*—Prize, E. R. Maddeford. *Black.*—Prize, Miss S. A. Elliott. *Red.*—Prize, E. R. Maddeford.

TRUMPETERS.—Prize, G. C. Adkins.

SPANISH AND LEGHORN RUNTS.—First and Second, S. C. Baker.

FOR EVERY OTHER VARIETY (deserving).—Prize, J. Baily, jun.; R. W. Fryer.

The show of Pigeons, upon the whole, is very good and satisfactory.

JUDGES OF POULTRY.—Messrs. Baily and Hewitt.

JUDGES OF PIGEONS.—Messrs. Bellamy and Cottle.

BRAHMA POOTRAS.

YOUR correspondent "SALOP," in his eulogy of the Brahma Pootras, draws a comparison between those in his own yard and his early Cochin pullets, as egg producers. I do not for a moment wish to undervalue the merits of Brahmans; but, as I find in my own yard that some strains of Cochin mature more quickly than others, it is possible your correspondent's may not be of an early maturing kind. I have now two pullets, hatched in February, which have not yet laid an egg, and yet I have others hatched at various times, from January to May, which have been laying for some time; still, all have been fed alike, and have had the same run.

With respect to the question, whether Brahmans are a variety of Cochins, or a distinct breed, I think if the latter was the case their admirers would long ere this have had some importations direct from the Brahma Pootra River district, and not have the question dependant on brother Jonathan's assertions; for, although his countrymen are a smart people, it is odd that they are the *only* nation who can obtain these birds from the district whose name they bear.

I have frequently been asked why I do not keep Brahmans; and my answer invariably is, that I cannot fancy such coarse-looking birds as those which are generally the prize-takers at our different Exhibitions—viz., those with *pea combs* and *dark pen-cillings*. I remember having seen some very handsome, good-shaped birds, exhibited by Dr. Gwynne, at Birmingham, in 1854; but they were of the lighter varieties, and unnoticed; and those now shown appear to me to be a mixture between White Cochin, rose-comb Dorking, and Malay, as they have generally the length of legs which indicate the Malay and Cochin, and the head of the Dorking and Malay. Had the light-coloured single-combed birds been kept to, and their admirers been willing to allow them to pass as Grey Cochins, they would have been as numerously kept as any other variety of Cochins; but the attempt to make them into a distinct breed, by giving the precedence to "*pea combs*," &c., has ruined their popularity. Nothing paid Barnum better than his Brahma dodge: he received £200 from one gentleman in this country for one pen of this variety!—ALPHA.

[The foregoing is from a most successful breeder and exhibitor of Cochin-China fowls. We quite agree with him in the opinion, that some strains of the Brahma Pootra are the results of a cross between the Cochin-China and the Malay. The first we ever saw of the Brahmans was at one of the Metropolitan Shows, held in the Baker Street Bazaar, and we then recorded our opinion that the pea combs, and the cruel look of the Malay, were betrayed in the head of those Brahmans.]

CREWE POULTRY SHOW.

As I was one of the Committee who had the management of the two first poultry Shows held at Crewe, I beg to inform the unfortunate prize-takers at the one held last October, that Mr. Margetts got it up entirely on his own account, without consulting even one of the old Committee; and not one of the members was aware that his prize lists were out, nor that another Show was about taking place.

Mr. Margetts must have been fully aware that Crewe was not a suitable place for a self-supporting poultry Show, as he well knew a good hard-working Committee had tried it twice, and were losers by the first Show to more than £30; and, with the strictest economy and barefaced begging, the second only cleared itself. I am told Mr. Margetts is about £30 on the wrong side with the foolish scheme. The old Committee were more particular in paying the prizes, as well as all other demands.

I hope, for the honour of our little town, and likewise for the honour of the old Committee, he will strain a point and pay the prizes that are due.—CHARLES COTTON, Crewe.

[Mr. Margetts must pay the whole of the prizes. We regret

his loss, but he must fulfil his engagements. If he declines to do so, we advise every one to whom a prize was awarded, to sue him in the County Court.—EDS.]

STOCKPORT PIGEON SHOW.

As you only gave the prizes for fowls in last week's COTTAGE GARDENER, I think you could not have received the particulars of the Pigeon prize list. I, therefore, enclose it, trusting you will insert it in your next. The Poultry and Pigeon Show being held in different buildings, is, probably, the cause of you only receiving the prizes for fowls.—AN EXHIBITOR.

CARRIERS.—First, H. Child, jun., Birmingham. Second, C. Layland, Warrington. Nine entries.

ALMONDS.—First, T. and J. Fielding, Rochdale. Second, R. Lees, Ashton. Six entries.

BALDHEADS.—First, S. Alcock, Heaton Norris. Second, H. Child, jun. Eleven entries.

BEARDS.—First and Second, J. W. Edge, Birmingham. Six entries.

JACOBINS.—First, G. Goore, Liverpool. Second, H. Child, jun. Seven entries.

FANTAILS.—First, H. Child, jun. Second, J. W. Edge. Eight entries.

TRUMPETERS.—First, W. Whiston, Macclesfield. Second, C. Layland. Four entries.

POWERS.—First and Second, H. Child, jun. Seven entries.

MOTTLED TUMBLERS.—First, T. and J. Fielding. Second, H. Child, jun. Six entries.

OWLS.—First, W. Greenwood. Second, T. and J. Fielding. Twelve entries.

NUNS.—First, G. Goore. Second, W. M. Lilly, Birmingham. Five entries.

TURBITS.—First, W. M. Lilley. Second, H. Child, jun. Six entries.

ARCHANGELS.—First, W. M. Lilley. Second, H. Child, jun. Five entries.

BARBES.—First, R. Lees. Second H. Child, jun. Five entries.

RUNTS.—First and Second, H. Child, jun. Five entries.

DRAGONS.—First, S. H. Cheetham, Stockport. Second, R. C. Woolfenden, Rochdale. Thirteen entries.

ANY OTHER VARIETY.—First, G. Goore. Second, E. Westhead. Nine entries.

JUDGE.—T. J. Cottle, Esq., Cheltenham.

STOCKPORT POULTRY EXHIBITION.

THE one just closed has proved itself by far the most successful Meeting that has ever been held in Stockport—not only were the entries numerically greater, but the poultry, as a whole, was very superior. The general arrangements were good. Indeed, with the exception of numbering the pens consecutively, we could not suggest any improvement whatever. Why they were not consecutive on this occasion, we were at a loss to determine, more especially as reference is far more difficult under the existing plan, nor can any obvious advantage accrue from adopting it. The Market Hall affords every facility for carrying out a first-class Show, being spacious, well ventilated, and the light excellent. On the present occasion it was adorned with a multiplicity of banners, whilst the exceeding cleanliness of the whole affords a good example for similar local Shows, tending as it does, alike to the comforts of both visitors and poultry.

The Spanish were good, and the Grey Dorkings were excellent.

The entries of Cochins were few; but among them were some that would do credit to any Exhibition.

In Game, there was an extensive and very excellent display; but, unhappily for their owners, some of the best pens were as dissimilar as possible in the colour of the legs, so that all chances of success were thrown away entirely.

We can scarcely call to mind any local Show where Hamburgs mustered so strongly and so well, more particularly the Spangled varieties. In the Silver-spangled, the tails of many of the cocks were perfection, being of the purest white throughout the whole of the ground colour, and most excellently defined in the spangle at the end of each principal feather. This, too, had been generally attained without any deterioration of the "barrings" on the wings, or spanglings on the crops and breasts of such specimens. The attainment of these desiderata combined, has always been considered one of the greatest difficulties breeders had to overcome. Several "Hamburg Clubs" sent pens for competition, and their success was remarkably good.

In Polands, although few only were shown, they were all praise-

worthy pens, all varieties competing together. But the Black with White Crests secured the premiums. It is pleasing to record this peculiarity of the Stockport Show, now that the Poland classes, usually, are so indifferently represented.

In Bantams, both Blacks and Whites left but little room for improvement, and some praiseworthy Game, and also Booted Bantams, competed.

In the class for *any other breed or cross-breed*, Black Hamburgs carried the sway. They were decidedly the best collection of this variety we have yet seen.

The Turkeys and Geese were not worthy of especial remark, unless we refer to a pen of excellent Spanish, shown as Greenland Geese.

In White Aylesbury Ducks, the competition was close and severe, and the Rouens were superior. Only one pen of Labrador Ducks, and one pen of White Calls, were exhibited: but they were both successful.

In all cases, the prizes only were awarded, no commendations being permitted by the rules of the Society.

The attendance of visitors was fully equal to the expectation of the Managing Committee; and the promptitude with which the poultry was returned to their owners cannot but be highly satisfactory to all parties interested, and will probably induce even a still greater amount of entries on future occasions.

BIRMINGHAM POULTRY SHOW.

I WAS sorry to see, in your last week's Number, that the receipts at the last Birmingham Exhibition of Poultry, &c., show a falling off, as compared with last year. I have been for several years convinced that the Committee are far too liberal with their admission tickets to subscribers who exhibit poultry. I think, instead of a subscription of £1, and 2s. 6d. per pen for four pens, and six admission tickets, if they were to charge 7s. 6d. per pen, and let each exhibitor pay 2s. 6d. for admission on the first day, it would not only bring more money into the Committee's coffers, but also tend to improve the average of the birds exhibited. Where a party only keeps one description of fowl, and can only make up one or two pens, the present subscription and pannage is almost a prohibitory one, and scarcely warranted by the value of the prizes offered. It is also well known, that others, to make up the number of pens allowed, send birds (in the vain hope of selling them) which would have been much better handed over to the cook, who would send them up to her master's table in a more inviting form than they appear in the Birmingham Exhibition pens.—ALPHIA.

OUR LETTER BOX.

CATARH, OR COLD IN HEN.—"I bought a Hamburgh hen two weeks ago; she has had ever since a habit of sneezing, as if she had a cold; and sometimes gapes (but seldom).”—ALEX STEWART.

[Your fowl has a bad cold, and, if you neglect it, you will find it the precursor of roup. The symptoms are ominous. Separate it from other fowls, wash out the nostrils with cold water and vinegar; purge freely with castor oil, a table-spoonful at a time, and every third day. Put it in a dry place, sheltered from draughts; provide it with growing grass, in large, fresh sods; feed on oatmeal, and bread steeped in strong beer.]

ANDALUSIAN FOWLS—DUBBING A GAME COCK (*A Constant Subscriber*).—The Andalusian should be in shape and form like the Spanish. The colour blue; the cock's hackle and saddle darker shaded; the face red; the comb of the cock upright, that of the hens falling. They are said to be a distinct breed; and they are certainly not the same as "white Spanish." Everything in the way of comb and wattles should be removed from a Game cock, when he is dubbed. Nothing should remain, in order that the head may have the snake-like appearance that is so desirable.

LONDON MARKETS.—JANUARY 10.

POULTRY.

We have to note a slight advance in prices, consequent, however, rather on a short supply, than an increased demand. The latter remains dull.

	Each.	Each.
Large Fowls	4s. 6d. ,,	5s. 0d.
Small ditto.....	3 6 " ,	4 0
Chickens.....	2 6 " ,	3 0
Geese	6 6 " ,	7 0
WildDucks	2 6 " ,	2 9
Pheasants	2 6 " ,	3 0
Partridges	1 3 " ,	1 6
Pigeons	0 8 " ,	0 9
Hares		2s. 3d. to 2s. 6d.
Snipes		1 2 " , 1 4
Teal.....		1 3 " , 1 6
Snipes.....		1 2 " , 1 4
Rabbits		1 4 " , 1 5
Wild ditto		0 8 " , 0 9
Woodcocks		2 3 " , 2 9
Larks		1 0 " , 1 0

WEEKLY CALENDAR.

Day of M'nth	Day of Week	JANUARY 18-24, 1859.	WEATHER NEAR LONDON IN 1858.						Clock afterSun	Day of Year.	
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R.ands.		
18	T	Trichomanes bulbocodium.	30.461-30.356	46-27	W.	—	59 af 7	22 af 4	rises.	(S)	10 39
19	W.	Neapolitan Violets.	30.330-30.147	50-35	W.	—	58 7	24 4	11 af 5	15	10 57
20	Th	Russian Violets.	29.878-29.818	51-32	N.W.	—	57 7	25 4	37 6	16	11 15
21	F	Sun's declin. 20° 57' S.	30.314-30.095	49-29	N.	—	56 7	27 4	15 8	17	11 33
22	S	Bulbocodium vernum.	30.459-30.392	41-24	N.	—	55 7	29 4	40 9	18	11 49
23	SUN	3 SUNDAY AFTER EPIPHANY.	30.550-30.509	46-17	W.	—	54 7	30 4	2 11	19	12 5
24	M	Leucojum multiplex.	30.564-30.271	43-16	S.	—	53 7	32 4	morn.	20	12 20

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 48.1° and 32.0°, respectively. The greatest heat, 60°, occurred on the 19th, in 1838; and the lowest cold, 41°, on the 19th, in 1848. During the period 101 days were fine, and on 95 rain fell.

THE LONDON HORTICULTURAL SOCIETY.

THE two courses we have invariably recommended to the Council of the HORTICULTURAL SOCIETY, as the only means of freeing the Society from its present difficulties, were the reduction of its expenditure and the appointment of a new Secretary. So long as they continued to maintain two expensive establishments, it was quite evident that nothing but ruin stared them in the face; but to dispense with one of these, and concentrate their efforts on the other, was a step towards recovery from present difficulties. Having at length seen the necessity for such a reduction, and that they must part with one of these establishments, or sacrifice the Society altogether, a party, headed by the Secretary, made strong efforts to induce the Council to abandon the garden, and retain the house in Regent Street. It was all but settled, that the garden should be abolished, and the Society lapse into a dry-bones affair among the smoke and dust of 21, Regent Street. Thanks to the endeavours of a few stout-hearted and clear-headed men, this enormity is not to be perpetrated. At the meeting of Council, held on Wednesday last, it was decided, that the garden is to be retained, and the house in Regent Street brought to the hammer. We hope that resolution will be carried out *this* time; it was so decided once before, but the excuse always made for a sale not being effected was, "Tis a bad time," or, "We cannot get the value of it." Now, the value of a thing is just what it will fetch; and a property such as the Society's house is, and situated in such a thoroughfare, if put up with the determination of selling, will be sure to fetch its full value.

There is one thing in the new arrangement we deeply regret, and that is, the sale of the library. Such a collection of gardening books, perhaps, does not exist in this country. The British Museum Library is proverbially meagre in this department, and where else can the student of gardening literature go, than to the admirable collection of the Horticultural Society? We do not speak of strictly botanical, but of gardening and botanico-gardening books. It is urged as a reason, that the members did not take advantage of it. But till lately, how many were there of the number who had courage enough to enter the library, even although they knew it was their own? A few adventurous individuals may have succeeded in commanding themselves to the authorities, and been graciously permitted to use what they had a legal right to; but there were a far greater number, who had too much self-respect, and too sensitive a temperament, to expose themselves to the supercilious and patronising assumptions of official authority, which have for many years past rendered the Society's library little more than a private study. We firmly believe, if the library was made "a feature" of the Horticultural Society; if members were encouraged to use it; if respectable, studious young gardeners were freely allowed to consult it on presentation of a Fellow's order; and

if some trouble were taken to give publicity to these facts, the library would be freely and profitably used. Why, the first thing every Society aims at is to obtain a library. Their libraries are the pride of our Mechanics' Institutes. Every Young Men's Society, many of the best-regulated manufacturing establishments, and almost every well-regulated community, however small, either have, or strive to found, a library. Will it, then, have to be said, in this age of progress and diffusion of knowledge, that the Horticultural Society sold its library because it could not afford to keep it? It is valued at £1,000, and perhaps would not sell for that sum; but suppose it did sell for so much, and reduced the Society's debt to that extent, it is but a saving of £30 or £40 a-year in interest, after all; and surely it is worth all that to the Society. After the house is sold, and the debt reduced by the amount of the sale, with a saving in rent and other expenses to the extent of £600 a-year in the Regent Street establishment alone, the Society will not be in such a bad plight, and there will not be the smallest necessity for parting with the library.

What the Council ought to do at this crisis in the Society's existence, is, to hold out all the attractions possible to the members, to lay aside all former traditions, to rid itself of all old encumbrances that haunt and hamper the Society, to inaugurate an entirely new régime, and then the public will have confidence; but, until they do this, they may sell library, gardens, and all, but all that will not save it from ruin at last.

GARDENING OPERATIONS FOR THE WEEK.
KITCHEN GARDEN.

IF the weather is favourable, continue to trench and ridge all vacant places where the crops have been cleared off. If there is only a small portion of a crop remaining,—*Cabbages*, for instance,—they may be taken up, and planted closely together in any spare corner. The ground between the growing crops should be occasionally stirred with the hoe, as the more loose the surface of ground, the less the frost penetrates; and a little earth drawn to the stems of *Cabbages*, *Broccoli*, *Brussels Sprouts*, &c., protects and strengthens them.

ASPARAGUS.—A gentle heat of about 55° will be sufficient for the producing beds: if the heat decline below that, a narrow lining all round the bed will be sufficient to renew it. As the temperature of hotbed-linings is apt to be lowered very much by cold, drying winds, it is advisable to protect them with straw hurdles, which can be easily made and set round them, and removed with facility when it is necessary to turn or renew the linings.

CABBAGE.—Sow in boxes, and treat as advised for *Cauliflowers*. Stir the soil between the growing crops, and draw earth to their stems, to prevent them from being injured by the wind.

CARROTS.—As soon as the young plants in the hotbed are about an inch high, thin them out to about three or four inches apart.

CAULIFLOWERS.—Sow in boxes; forward in a gentle

heat; and prick out in a protected situation in February. They will succeed the winter plants sooner than any that may be sown in the open ground; and, should severe weather, or any other cause, destroy the plants of the autumn sowing, they will be most valuable as substitutes.

CUCUMBERS.—The fruiting-bed should now be made, if the seeds were sown as recommended last week; and as soon as the heat is up, the light should be raised, to allow the steam to escape; then fork up the dung to the depth of a foot or more twice or three times a-week, until the plants are nearly ready to turn out. As soon as the seeds in the seed-bed are up, and the two seed-leaves are fully developed, pot them in leaf mould in 48-sized pots, two in a pot; let the roots touch the bottom, and only partly fill the pot with soil, adding more at intervals of two or three days.

LETTUCE.—Sow in boxes, and treat in all particulars as advised for *Cauliflowers*.

PEAS and BEANS.—Protect those that have made their appearance above ground, by drawing the soil, when light and dry, over them, or by sticking small branches of fir, or any other evergreen, on each side of the row.

POTATOES.—If any of the early sorts are sprouting, they may be planted at the foot of a wall, or fence, with a south aspect, or in any dry, sheltered border, and covered with soil four or five inches deep.

RADISHES.—The same as advised for *Carrots*.

FRUIT GARDEN.

GOOSEBERRIES.—If these, or any other fruit trees, are covered with moss, they should be now coated with a mixture of quicklime, sulphur, and soot, made of the consistency of paint, and laid on with a small brush; or the trees may be syringed, or wetted, and dusted with quicklime in a state of powder.

WALL TREES.—Proceed with the pruning and nailing.

FLOWER GARDEN.

All beds intended for bedding-out plants should be deeply dug, and manured with leaf mould in preference to dung, and left exposed to the weather in a rough state. All arrears of winter work to be now finished up, that it may not interfere with the approaching spring and busy season.

CARNATIONS and PICOTEES.—The soil intended for blooming these plants in should be frequently turned and exposed to all weathers, excepting heavy rains or snow. Give all the air possible to the plants, and keep them clean and moderately dry.

HOLLYHOCKS.—Plant immediately, if the weather is open.

HYACINTHS (Choice).—Protect in severe weather, by turning a pot over them.

PANSIES.—Prepare the soil; and keep it dry, for repotting early in February (if the weather prove mild) those intended for blooming under glass. Seedlings and plants in beds should be looked over weekly, pressing firmly in the soil any that have been loosened by frosts or by worms.

PITS and FRAMES.—Prepare dung and leaves, or any other such fermenting materials, for a hotbed, if there is no other convenience in which to propagate flower-garden plants.

POLYANTHUSES.—Those grown in beds should be looked to. See that the stems of the plants are not exposed; if so, earth them well up to the foliage before frosts set in.

ROSES.—Plant, if the weather be mild. All Rose cultivators concur in recommending a highly-manured soil for them, with a thoroughly-drained subsoil. Each tree should be supplied with a mixture of turf loam and half-decomposed dung—about one barrowful of the mixture to each tree.

TULIPS.—Place some sandy peat, or light soil, over the rising plants, in small cones, just as they emerge from the ground. It will be a great protection, if severe

weather should set in, if done before they get so forward as to open, for then it would be of more injury than service to them.

WILLIAM KEANE.

CRYSTAL PALACE—JANUARY 11.

WHETHER I went to see the grand, if not the grandest, poultry show; or the Christmas revels, and the children at sport; or the plumpudding and the cake; or to find out that a word was wanting on one of the four full moons—the four welcomes—on the four corners of the naves, in the centre transept (the Highland welcome—*cead mille failtha*—wants one more word—*dhui*—to make a meaning);—I say, whether I went to see all this, or the way they force for early flowers, or the state of the vegetation amongst such gaities as go on here by gas-light, matters not,—I saw Mr. Eyles' new house, and a splendid house it is—none of that size, or anything like it, was ever made, or so well put up, at so low a figure. But it is a landlord's house, to the last pane: it is fixed as firmly as the new houses at the Experimental, and the roof is propped; but there is no rafter, although the lights are twenty-two feet long, and all in one piece—that is, each light is in one whole piece, and the whole roof fixed. Since this house was in hand, and since the question of portable houses came to attract so much public notice, Sir Joseph Paxton has turned his attention to these portable stoves, where all things can be put to keep for the winter, and where most things could be grown in summer; and which, if not wanted in summer, might be taken down as easily as iron bedsteads, and packed up in a corner under cover, or carried across the country, or the sea, to anywhere in Her Majesty's dominions, with or without the ground landlord's consent. Sir Joseph's portable houses are to be span-roofed, with both sides of the roof fixed as firm as London or Gibraltar, and without rafters, props, or staybars: so that he, of all the inventors, comes the nearest to what we have proved, at Kingston, to be the best style and principle of building all kinds of plant houses.

Then, to think of Sir Joseph Paxton having his fingers in the pie at his time of life, and at the beginning of the second Reform Bill; but so it is, and so will the reform of hothouse building be established in this country and kingdom, as sure as fate. I thought Mr. Macrostie's was the best hit, till, in my mind's eye, I saw that by Sir Joseph Paxton. But I can now see they are both best, and quite different.

The Paxtonian portable structures, however, are yet to come, and Mr. Eyles is waiting for the sashes to arrive from London, where they are being made under Sir Joseph's own eye. This is how the roof is to be. Each pair of lights is to meet at the ridge, on a bevel, which will allow them to fit each other quite close. The one has a screw stud, and the other an eye to receive it at top; and, when both are thus screwed, the next pair is set up to stand four, five, or six inches apart from the first pair. The coping to cover these openings between the lights are to be worked, or may be worked, on any of the simplest principles of giving air; and anything from half an inch to six inches of air may be given between each pair of lights, from top to bottom, and on both sides. How the lights are to be fastened at the bottom, depends on what the bottom is: they are otherwise tied together by the tie of the coping; but that exact tie I cannot explain till I see the plan, or the roof itself. The principle is to be first proved by the fixing of a roof only to enclose fifteen or eighteen feet in width, and to run the length of about 100 feet. The ground is ready for the roof, and there is a sunk path along the centre, which makes a level platform on each side, as in the new houses at the Clapton Nursery. These platforms are covered with ashes to stand the pots on. But plans of the whole will be published from Sir Joseph's own hand, after the house is tested.

The new house, of which Mr. Eyles spoke, is for Camellias. The aspect is west, or north-west. The length is seventy-two feet; width, eighteen feet; length, of light, twenty-two feet nine inches; height of the back wall, eighteen feet, four feet of which is glass, also in lights, which are hinged at top, and open outwards, for giving top air, the whole roof being fixed; height of front wall, six feet, half of which is glass lights, hinged at top and opening outwards for front ventilation. The glass is ten inches wide, and in panes three feet long. Across the middle of the roof runs a trussed girder, and each truss twenty-four feet long, or, more technically, three truss girders, each twenty-four feet long. Then, if you measure one truss twenty-four feet from the east end, and a second truss twenty-four feet from the west end, you must have a support under each of them, at the ends farthest from the end of the house. These are the only two supports to the roof; and between the two comes the third division of twenty-four feet and truss. From the two said supports run two tie-bars to the back wall, and the top of the back is tied to the Crystal Palace.

Both ends of this house, above the height of the front, are of glass; and there are four runs of four-inch pipes, two over, two along the front, and two four-inches pipes along the back wall; and the boiler, like all the rest of the boilers for heating the Crystal Palace, is the common saddle boiler.

The Camellias in this house were looking splendid, and were full of bloom-buds. In another long, low, span-roofed house, with a walk along the centre, and raised level stages on each side, hundreds of forcing Hyacinths, Tulips, and other spring bulbs, are standing under the stages, on gravel, in a forward state of showing bloom; also, *Dielytras*, and *Deutzia gracilis*, which will soon be up. Cinerarias and China Pinks were in bloom, on the stages, in scores. Also, large lots of the variegated Hydrangea, and other variegated plants, to brighten up the Crystal Palace by-and-by.

Here I found two kinds of most useful variegated plants, which I never saw at an exhibition. One was *Daphne Japonica variegata*—a very rare plant, which I never saw before: it looks nearly like a *Pittosporum*. The other is the variegated tree Houseleek, *Sempervivum arboreum variegatum*, as old as the hills, but scarce in the trade, as one hardly ever sees it in the nurseries.

In another division of this house, which is kept hot, was the finest lot, and the greatest number of *Dracæna terminalis* I ever saw. They were in 32-pots, and from a yard to thirty inches high, in strong loam, and the tops close up to the glass. In such masses, this is the most telling of all the variegated plants. Three or four of the top leaves of each plant are fiery crimson, with pink, scarlet, and lake tints, in various and changeable degrees. There are others,—called *Dracæna Leonensis*, *esculenta*, and *marginata*,—handsome-leaved kinds, and scarce. They came there from the Messrs. Loddige's rich stoves. They do not seem to want so much heat as the purple-leaved section, as one sees them now, in full beauty, in the marble vase beds along the sides of the basin in the tropical end, in which *terminalis*, *ferrea*, and *nobile*, would get much checked in the dead of winter. *Chamaædorea elegans*, alias *Hartwegii*, is, indeed, a most elegant and useful little Palm, from Mexico, which they grow largely, as it flowers through the winter months without very strong heat. Also, large quantities of *Farfugium grande*, just the thing for the Crystal Palace. Mr. Eyles made a bold stroke in attempting to prove whether what the seer said, in the vision, about the origin of *Farfugium*, was really true; but he did not succeed in getting any seeds to ripen. If the origin be what the weird body represented, the seedlings would come as green as anything.

There was a long row down the passage of the finest Ferns from New Zealand, just come over in capital condition, in a Wardian case. The plants were planted in

soil, and the glass painted white. The same case has been going from here to hence since the Crystal Palace was thought of; and there is a back load each time; and each plant in each journey tells its own tale, after a little nursing; but dead plants tell no tales.

Among these Ferns are huge root-stocks of *Dicksonia squamosa*, which looks like *Cyathea medullaris*, of some collections. They have immense quantities of this *Dicksonia*, which does well wherever they put it. The finest plant of it, perhaps, in the kingdom, is theirs, on the south-east side of the basin, in the tropical end. They had it from Her Majesty, and, like many more of them, it stands *on the water*: the bottom of the pots just touch the surface of the water, and no more. The water is much warmer than the air over it; therefore, the roots are in moist bottom heat the whole winter; and that is the secret of hill and brae plants doing so much better on the water than over it, or by the side of it, as they most certainly do here.

But, about Her Majesty's present. The said *Dicksonia squamosa*, alias *Cyathea medullaris*, stands fifteen feet high. Some of the leaves are from ten to twelve feet long. There are seventeen leaves on the head just now, and three more coming; and others from the native wilds, in all sizes, down to the prettiest little *Dicksonia* imaginable—no higher than to be able to keep its one set of leaves just free from the water, after the manner of a water-fowl enticing the boys away from its young. Opposite is a golden *Gymnogramma*, six feet across, luxuriating in the bottom heat; and more strange still, *Adiantum formosum*,—the best of them for sprigs for nosegays,—full six feet through, and thoroughly at home.

But the most symmetrically beautiful plant there, is the Fan Palm of Australia, *Corypha australis*. It is ten feet through, and only five feet high; and there are twenty-five fans on it, every one of which is just as if it was put there on purpose to form its share of exactness—so many of the fan-like leaves hang over the pot, so many just over these, and so many as no artist on earth could place more perfect to command the eye of a lady of good taste. But where do you think this plant was growing? just in a metal vase, inside the marble vase, and such as all the old *Tom Thumbs* grow in along the terrace vases in summer, and nothing more. This beauty was matched, on the opposite shore of the tropical lake, by a Bourbon, or Isle de Bourbon Palm, *Latania Bourbonica*. The next pair was of the Wax Palm of the Andes, *Ceroxylon Andicola*; the next pair, the same; and the last pair, the Bourbon Palm. On this lake is also a very dwarf kind of *Musa Cavendishii*, which ripened fruit this autumn better than it would, or ever did, plunged in a bark bed. Depend upon it, some one will make a name for himself, and his heirs for ever, by hitting on a water hotbed, to get up things at half the cost and trouble. And if the hippopotamus is really a cow, as Mr. Gordon, and Dr. Livingstone say, and if some one else could hit on a way of keeping these cows from the fruit, we might have Strawberries and cream from the same lake,—and why not?

But do you happen to recollect having seen in the *Illustrated London News* a Palm tree drawn over London Bridge by thirty-two horses? That Palm was lifted on Harry Moore's plan, of tunnelling under trees, and sloping down to the tunnel, before he cut the surface, for the ball. That was a Bourbon Palm, and is now the finest of the kind at the Crystal Palace, and, perhaps, forty feet high, with a massive head of fine leaves; and not far from it is the largest Australian Fan Palm; also, the aforesaid *Corypha*, sometimes called *sylvestris*; and the great spreading Palm at the farthest end, the great Palmetto. I ought also to mention, that the *Lycopodium denticulatum* under it, and all over the surface of the bed, is renewed every spring; and that it is a good plan to renew it wherever it interferes with the roots of other plants, as few kinds can make surface

roots, where Lycopods engage the top soil. Once I had a narrow back border for Camellias completely ruined by this very Lycopod.

Pincinetia tuberculata, which comes like and looks very like a New Zealand "Clubroot" Cordyline, is a most graceful-looking plant here, and would associate with the green-leaved Dracænas to perfection. Just think of an ordinary Turnip, with only a third-part out of the ground; but, instead of leaves, to gather into the centre and form a stem as thick as it is, that stem to be from a foot to goodness knows how many feet high—say, three feet for a prize plant; then on the top, as on a standard Rose, a large head of leaves, not much broader than those of the Pampas Grass, rising up, and then falling over in graceful curves; and that a Clubroot tree, which is easy to keep, to grow, and to exhibit in collections of fine-leaved plants.

Speaking of plants easy to grow, just read the following, which I noted on purpose, in the cool end, and in one bed, side by side, and all doing capitally:—The Elephant's Foot (*Testudinaria elephantipes*) growing as an Amaryllis, and now a yard high since last October; *Hedychium Gardnerianum*, *H. acuminatum*, and *H. heteromallum*; *Raphis flabelliformis*, a Palm from China; *Woodfordia radicans*, a noble Fern; a tree Aloe; the Indianrubber Fig; the African Arum; Calla, or Richardia; *Chamaerops Martiana*, a beautiful Palm; Fuchsias; Yuccas; *Dicksonia antarctica*, a splendid tree Fern; *Seaforthia elegans*, a Palm of the first water; the Cabbage Palm of Australia; the Loquat of China; the Himalayan Bamboo, alias *falcata*; *Phænix dactilifera*, the European Palm; *Buddleia Lindleyana*, with a single stem twenty feet high, and branched to the bottom; with *Polygala Dalmatiana*, and lots of very common half-hardy things. Who would be without such plants in a winter garden, if ever so small, if the cost could be spared? or who so knowing as to assert, that no one can have Palms without stove heat? They look just as healthy as the Camellias in the next beds. Or, read a second bed, the coldest in the house:—Agapanthus, *Witsenia corymbosa*, *Geranium*, or rather *Pelargonium lobatum*, Aloes, Sweet Bays, Myrtles, Laurustinus, *Rhododendron Edgeworthianum*—a single-stem ten feet high, and well clothed with leaves; other Rhododendrons, Camellias, and Oleanders, with a lovely plant of *Pleroma elegans* in the midst of them. It is six feet by six feet, and as healthy as a dairymaid; and if a dairymaid could be found who would marry any one of those prophets who dreamt that fine plants would do no good in the Crystal Palace, sooner than tie the two in wedlock, I would have both fastened to the tail of the great brown Yaak, or cow of Thibet, which stands hard by.

D. BEATON.

BRITISH POMOLOGICAL SOCIETY.

AN ordinary Meeting of this Society was held on the 8th ult., Robert Hogg, Esq., Vice-President, in the chair.

The following gentlemen were elected ordinary members:—EDWARD BANKS, Esq., Sholden, near Deal; WILLIAM WIGAN, Esq., Walton Lodge, Walton, near Stafford.

Of the fruit laid before the Meeting on this occasion, the following are the most interesting items of information. Much, however, of that which is collected, especially that derived from the carefully filled-up forms, is intended to be collated with other similar matter, and embodied, in a carefully-digested manner, in the next transactions:—

Mr. WIGHTON, of Cossey Hall, Norfolk, again sent his SEEDLING, observing, that he had cut the first bunch from the same Vine on August 5th, when the crop was first ripe, showing that the bunch now sent had been kept over four months. He also stated, that he began forcing the house in which they had grown in December last, and

that it had stood open for some time past, and, in two instances, exposed to several degrees of frost. On the former occasion, the Meeting expressed a very favourable opinion of it, desiring to see it again at this season, to test its keeping properties. Doubts, however, were felt as to its being perfectly distinct from some varieties of the *St. Peter* section, evident affinity thereto being proved by its foliage; and on this occasion it was not considered quite so juicy as *West's St. Peter's*. The Meeting were of opinion, that Mr. Wighton should be invited to send it again next year, on the days specially appointed for the examination of collections of Grapes, and that the final opinion of the Society regarding it should be reserved until then.

Mr. MELVILLE (Dalmeney Park, near Edinburgh) again sent his Seedling MUSCAT GRAPE, which had been laid before previous Meetings (August 19th and September 9th); and being then considered promising, was invited to be exhibited in a higher state of development next year. In this instance, a small bunch was sent, upon a *third lateral* shoot, to evince the prolific habit of the variety.

CLASS A.—Premiums of £1 and 10s. for the best and second best Six fruits of GLOUT MORCEAU Pear (growers in the Channel Islands excluded from competing in this class).

Nine very excellent dishes were exhibited in this class, from different parts of the country, and so nearly did they approach each other, that it was not an easy matter to decide upon their respective merits. The following, however, is the order in which they were placed:—

The first prize was awarded to a dish exhibited by Mr. J. HALL (gardener to Thos. Lucas, Esq., Lower Grove House, Roehampton) from west wall, free stock; soil light and sandy, over very porous and drained subsoil. Fruit medium sized for the variety, very handsome and perfect, deliciously juicy and melting, with very rich, sugary flavour. Considered one of the finest dishes of Pears which had been exhibited at the Society's Rooms this year.

The second prize, to a dish by Mr. TILEY, Abbey Churchyard, Bath, from an espalier, on pear stock; soil stiff loam, over strong clay. Fruit small, compared with those from walls, very juicy, melting, and sugary.

The comparative quality of the remaining dishes was according to the order in which they are described:—

By Mr. WIGHTON, Cossey Hall, Norfolk, from east wall, on light soil, artificially enriched, over brown sand and gravel. Fruit medium sized; most buttery, and richly flavoured. *Very highly commended.* Reported to be a shy bearer, and apt to crack, in this case.

By F. J. GRAHAM, Esq., Cranford, Middlesex, from west wall, pear stock; soil sandy loam, over stoney clay, naturally wet, but drained. Fruit small, but juicy, melting, vinous, and sugary. Reported to be fine flavoured on south wall, but subject to be spotted and cracked.

By Mr. WHITING, the Deepdene, Dorking, from east wall; old tree; soil sandy. Fruit medium sized; buttery, melting, and sugary, but slightly astringent. Reported not to succeed on pyramids in this garden.

By Mr. ROBT. DUNCAN (gardener to J. Malcolm, Esq., Lamb Abbey, Eltham, Kent), from a south-west wall. Fruit medium sized, melting, and sweet, but not high flavoured, in comparison with other dishes.

By Mr. COX (gardener to William Wells, Esq., Redleaf, Penshurst, Kent), from west wall, re-grafted twelve years back on an old pear tree; soil rich garden mould, over yellow argillaceous clay, rather damp, recently drained. Fruit very large, pale coloured, buttery, and sweet.

By Mr. STODDART (gardener to J. Gurdon Rebow, Esq., M.P., Wivenhoe Park, near Colchester), from south-west wall, pear stock; soil rich garden mould, over stoney, loamy clay, damp, but drained. Fruit very large and green, juicy, and buttery, but not high flavoured.

Another dish, grown on a standard (No. 4) in the same

garden, were much smaller, melting, and juicy, but astringent.

By Mr. SMITH (gardener to T. W. Tatton, Esq., Wythenshaw, Cheshire), from south wall; young tree, on pear stock, planted on prepared stations; soil strong loam, over clay. Fruit very large and green, buttery, and melting, but rather watery, and deficient in saccharine flavour.

From the above facts concerning aspect, district, soil, &c., the following deductions may be gleaned:—1st. That it is generally a variety requiring a wall, although succeeding well on espaliers in the south-western counties. 2nd. That the quality of the fruit graduates very nearly as the soil passes from light sandy loam, over porous sub-soils, to strong loam over retentive clays. 3rd. That size increases, but flavour diminishes when the trees grow on rich garden mould. 4th. That the more favourable aspects on which the trees are grown, in *Essex* and *Cheshire*, are insufficient to compensate for the stronger soil, combined with the difference in latitude. 5th. That, in the south-western district, the difference of climate is sufficient to compensate for that between wall and espalier, and between strong soil and light. This synopsis of the comparison between the merits of the different examples and the circumstances under which they have been grown, is given as an instance of the manner in which it is proposed to collate, analyse, and classify the information gathered, concerning different varieties, so soon as a sufficient body thereof is obtained, to admit of its being done in a reliable manner. No comment is necessary, to explain the great usefulness of such information when made public. It is also given to show to members and others, the great aid they may render, by sending specimens of all fruits in season, accompanied by forms carefully filled up. It is proper to mention, that in the above deduction the leading features only of the information furnished have been made use of; there are many other points—such as shelter and exposure, altitude, inclination of surface, &c.—which modify the effect of the more important conditions and circumstances, and which will be useful in more extended analyses, by explaining results which would otherwise appear discrepant.

Two remarkably fine and attractive dishes, "not for competition," were sent by Messrs. WEBBER and Co., Covent Garden, one example having been grown on a west wall, and the other on a standard.

CLASS B.—Premiums of £1 and 10s. for the best and second best Six fruits of WINTER NELIS Pear.

Nine dishes, also, were exhibited in this class; but their general quality, either in appearance or flavour, was not proportionately equal to those in the previous class. The finest dish, in every respect, was one placed, "not for competition," by Messrs. M. WEBBER and Co.

The first prize was awarded to a dish exhibited by Mr. COX, from a south wall (soil, see *Glout Morceau*). They were large, very juicy and melting, vinous, and sugary in flavour.

The second prize, to a dish by Mr. WIGHTON, from an espalier. Fruit small, somewhat shrivelled and spotted, but deliciously juicy, melting, and fine flavoured. Reported to be much subject to mildew.

The quality of the remaining dishes was according to the order in which they are described.

Exhibited by Mr. TILEY, from an espalier. Medium sized, melting, and sugary.

By Mr. M'LAREN (gardener to J. C. Whitbread, Esq., Cardington, near Bedford), from east wall, on light, black, gravelly soil, over very porous subsoil. Fruit medium-sized, very melting, and sweet, but slightly astringent.

By Mr. JAMES HOLDER, of Reading, from standard; soil very rich, over sandy loam. Very large and fine in appearance, promising to be equally so in flavour, but not ripe enough to compare with others.

By Mr. MELVILLE (gardener to the Earl of Rosebury, of Dalmeny Park Gardens, near Edinburgh), from a south

wall, re-grafted on an old *Crassane* tree. The latter variety is a shy bearer in this garden; but the *Winter Nelis* is reported to be one of their best December Pears. Soil deep light loam, over rather gravelly rock. Fruit medium-sized, clear, and healthy, but very green texture, very buttery, and melting, but deficient in flavour. Good, however, for the latitude.

By Mr. NEWTON (gardener to G. J. Graham, Esq., East Lodge, Enfield Chase), from a wall, on quince stock; soil rich garden mould, over London clay. Fruit large and handsome, melting, but watery in flavour.

By Mr. SMITH, Cheshire, from a pyramid, pear stock; planted on a prepared station. Very similar in appearance and quality to the last.

By Mr. ELLIOTT (gardener to the Marquis of Stafford, Lillishall), from a south wall, with the ground much shaded by very massive, projecting buttresses; soil strong clayey loam; subsoil clay, over old red sandstone; very high and exposed. Fruit small, and indifferent in appearance; dry in texture, compared with the previous varieties; and watery in flavour. This exhibition is one of a class which the COUNCIL are anxious to have more frequently laid before the Meetings, as they are equally serviceable to the purposes of the Society in adding important items of information. The Council will be glad if contributors will bear in mind, that it is desirable to ascertain and disseminate information, not only regarding the kinds which are suitable for given localities, but also as to those which are unsuitable.

CLASS C.—Premiums of £1 and 10s. for the best and second best Six of any other kind of Dessert Pear in season, excepting *Glout Morceau* and *Winter Nelis*.

In this class, twenty-three dishes were sent, in seventeen varieties, by fourteen exhibitors. There were not, however, many of the dishes in first-class state, showing very much the necessity of great improvement in the knowledge of pomology, in that so few really good Pears are found in gardens at this season, when they are most needed, and would be most plentiful, if sound information as to the most desirable kinds were within the reach of purchasers and planters.

The first prize was awarded to a dish of MARIE LOUISE, exhibited by Mr. SHOESMITH (gardener to J. Mornan, Esq., Bexhill, Sussex), from south-west wall; soil medium loam, over stiff clay. Fruit in very fine condition, large, clouded with russet, very buttery and melting; flavour rich and sugary.

The second prize, to a dish of VAN MONS (LEON LE CLERC), also by Mr. SHOESMITH, from espalier; very large, russety, buttery, and melting; rich, aromatic, and very sugary. This dish was scarcely ripe, or it would have been first instead of second.

COMTE DE LAMY was exhibited by Mr. HOLDER, from a standard. Fruit very juicy, but rather rough and gritty in texture; good aroma; flavour rich, vinous, but rather sharp.

BERGAMOTTE CADETTE, or *Beurré Beauchamp*, by Mr. WHITING, of the Deepdene, from a pyramid, on quince stock (soil, see *Glout Morceau*). This is a little-known, small, roundish-obovate Pear. Average size—2, 3-16 inches greatest length, by 2, 5-16 inches greatest diameter. Colour bright lemon, with patches of light russet, and very dark, irregular spots; calyx open and perfect; texture juicy and melting; aroma slight; flavour sweet, but not rich. Mr. Whiting reports, that this variety possesses, in a greater degree than any other variety he knows, the quality of ripening so as to furnish a long succession from the same tree.

BEURRE D'ABEMBERG, by Mr. SHOESMITH, from south-east wall, in nice condition. Juicy and melting, but rather gritty; flavour rather acid, but pleasant.

OLD COLMAR, by Mr. UNDERWOOD, from an old tree, on south wall. Very juicy and melting, but not rich.

MATTHEWS' ELIZA, by Mr. MATTHEWS, of Clapham Rise. This variety was brought as a Seedling before the

Society, on December 3rd, 1857, and then highly commended. It was not, however, on this occasion found to be so fine in flavour, though very juicy and melting.

PASSE COLMAR, by Mr. M'LAREN, from dwarf standard, on quince stock. Unripe.—By Mr. SMITH, Cheshire, from south wall. Large, handsome, but dry and deficient in flavour.—By Mr. WIGHTON, from south wall. Sugary and juicy, but not melting.—By Mr. MELVILLE, also from south wall. Juicy, and half melting, but deficient in flavour. Good for the locality.—And by Mr. SPIVEY (gardener to J. A. Houlton, Esq., Hallingbury Place, Essex), from pyramid, on quince stock; soil rich garden mould, over strong but well-drained subsoil. Large, handsome, and ripe; melting and juicy; sweet, but not high flavoured, although the best dish exhibited in this variety.

FORELLE, by Mr. MORRIS (gardener to Thos. White, Esq., Manor House, Wethersfield), from espalier pear stock; soil sandy, over very dry, sandy subsoil. Fruit very handsome, juicy, and half melting, but deficient in flavour.

BELLE DE NOEL, by Mr. MORRIS, from a pyramid, on quince stock. Fruit very juicy, but only half melting; not high flavoured.

ORPHELINE D'ENGHEIM, by Mr. MORRIS, from an espalier, on quince stock. Fruit very good in size and appearance, but indifferent in texture and flavour.

BEURRE DIEL, by Mr. STODDART (No. 3), from an east wall.—BEURRE RANCE, by Mr. WIGHTON, from south wall.—And EASTER BEURRE, by Mr. GRIEVE (gardener to the Rev. E. R. Benyon, Culford, Bury St. Edmunds); and by Mr. WIGHTON, from west wall;—were unripe.

EYEWOOD, by Mr. SHOESMITH. Fruit in good condition, very juicy and melting; flavour pleasant, but acid.

VICAR OF WINKFIELD, by G. WOLSEY, Esq., St. Andrews, Guernsey. Good in appearance, juicy, and half melting, but deficient in flavour.

SUSSETTE DE BAVAY, by Mr. WIGHTON, from a south wall, regrafted on *Crassane*. Good in appearance, but rather dry, soft in texture, and, though sweet, not high flavoured. Reported to be a free-bearing and useful kind in the district, and that last year it was excellent in March.

(To be continued.)

HOW SHOULD VINE BORDERS BE COVERED?

My letter, on the utility of covering Vine borders, has certainly been misunderstood by "YOUNG BLOOD," for he says that I advocate cold borders, which certainly is not the case. If I had it in my power, I would have my Vine borders heated by hot-water pipes running underneath the borders, not over them; but, as I am unable to do that, some time before I commenced forcing I covered my borders with long stable dung, about one foot thick; and over that I laid a quantity of old oak palings, in large panels, which keeps the borders quite dry, and, I think, prevents the escape of any heat they may contain. "YOUNG BLOOD" says, that he covers his borders in the autumn, whilst they are warm, with a quantity of fermenting material. Would not a moderate covering of non-conducting material answer the same purpose?

I am but young myself, and, unfortunately, my father is a Scotchman, which I suppose is the cause of my inquiring into the why and wherefore of everything that I see practised; and when I saw a man heaping hot dung on his Vine borders, while the roots were two feet from the surface, I wondered whether the heat would ever reach them. I also thought, that if the roots were close to the surface, and the heat should happen to descend, the quantity that he put on would probably burn them; and having seen first-rate crops of Grapes produced very early, by merely covering the roots with partially decayed leaves, I thought that covering the borders with hot dung was unnecessary trouble; and, not knowing whether I was right or wrong, wrote to THE COTTAGE GARDENER, hoping that some older and wiser gardener would kindly enlighten me upon the subject. But be it

understood by "YOUNG BLOOD," that the question I ask, is not whether heating borders is beneficial or necessary, but whether laying on quantities of fermenting material *really* does heat them, and to what depth?—A. A.

THE SCIENCE OF GARDENING.

(Continued from page 231.)

SOWING.

THE seeds of plants present an endless variety of forms and colours, and sizes; but in their structure they are chiefly divided into two great divisions—seeds with one cotyledon, or seed-lobe, and seeds with two cotyledons, or seed-lobes. Plants with seeds having two lobes, come chiefly under the care of the gardener; therefore, from one of these, the Kidney Bean, we shall derive our drawings illustrative of the germination, or sprouting, of seeds.

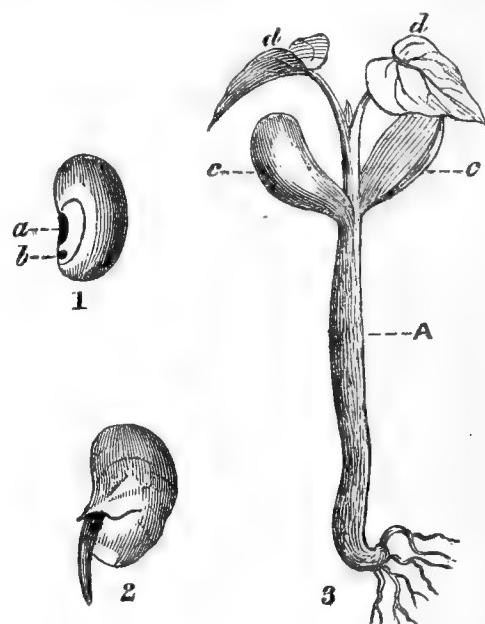


Fig. 1, represents the seed before it is committed to the soil; *a* is the hilum, or point of union, by which it was united to the seed-pod; *b* is the small opening (*micropyle*) through which the rootlet (*radicle*) is protruded. When the seed is placed in circumstances favourable to germination, it absorbs moisture, and is swollen; its radicle is elongated through the opening, Fig. 2, and penetrates into the soil; the skin is ruptured; the young stem (*caulicle*), Fig. 3, *A*, extends upwards, bearing the two seed-leaves (*cotyledons*), *c*, *c*, which furnish nutriment to the young plant, and which, when the young stem and first leaves, *d*, *d*, are developed, wither and fall off.

That the seed should have a perfectly developed embryo, and have arrived to nearly perfect ripeness, is essential to its being able to germinate. The reason for this is obvious: the young plant requires for its earliest nourishment a peculiar compound, usually saccharine, or sugary, matter; and this compound, in accordance with that universal fitness of things which demonstrates the wisdom of God, is always generated by the combined agency of heat, moisture, and oxygen gas,* from the substances most abundant in the fully-ripened seed. Let Barley be the example. Saccharine matter is essential for the first nourishment of the radicle or first root, and plumule, or first stem and leaves of the seedling; and into such saccharine matter is starch converted, by the combined agency we have named. It is starch, therefore, that is the chief constituent of the seed. But if Barley is gathered imperfect, and is dried, the chief ingredient is mucilage or gum; and this, if exposed to the essentials for germination, heat, moisture, and oxygen gas, instead of passing into saccharine matter, is converted into acetic acid, or vinegar, and the seed decays instead of sprouting.

As it is necessary that every seed should have nearly attained to ripeness before it acquires the power of germinating, so it is equally certain, that the length of time it retains the power to

* Oxygen gas is a chief constituent of the air, without which gas neither a seed could sprout nor an animal breathe.

germinate differs in almost every plant. The seed of the Coffee shrub loses all power to grow, unless sown within a few weeks after it has been gathered, whilst that of the Melon improves by being stored for one or two years, and Celery remains capable of germinating for five times the last-named period.* These and all other instances within our knowledge demonstrate, that the more starchy and other matters, into which nitrogen does not enter as a constituent, that a seed contains, the longer will it retain its power to grow; and two familiar instances are, common Rice and the Kidney Bean.† Rice contains eighty-five per cent. of starch, and will retain its vegetative powers for many years; whilst Kidney Beans, which contain one-third their weight of amino-vegetable matter and other constituents, of which nitrogen is a component, will not vegetate healthily a second season.

CAROLINA RICE.

	KIDNEY BEANS.
Water	5.00 Skins
Starch	85.07 Starchy fibrous matter
Parenchyma	4.80 Starch
Gluten	3.60 Amino-vegetable matter
Uncrystallisable sugar	0.29 Extractive
Gummy matter, approaching starch	0.71 Albumen and vegeto-animal matter
Oil	0.13 Mucilage
Phosphate of lime	0.13 Loss
	99.73 3840

This speedy loss of growing power to which seeds abounding in nitrogenous matter are liable, is just what the chemist would predict, for all bodies so constituted are most prone to decomposition and decay.

The following list, furnished by the late Mr. Loudon, shows the greatest age at which some of our common garden seeds germinate freely; and this result of experience is quite concurrent with our knowledge of their chemical constitution:—

One year.—Peas, Beans, Kidney Beans, Carrot, Parsnip, Oraches, Herb-patience, Rhubarb, Elm, Poplar, and Willow.

Two years.—Radish, Salsify, Scorzonera, Purslane, the Alliums, Cardoon, Rampion, Alisander, Love Apple, Capsicum, Egg-plant.

Three years.—Sea-kale, Artichoke, Lettuce, Marigold, Rue, Rosemary.

Four years.—Brassicas, Skirret, Spinach, Asparagus, Endive, Mustard, Tarragon, Borage.

Five and six years.—Burnet, Sorrel, Parsley, Dill, Fennel, Chervil, Hyssop.

Ten years.—Beet, Celery, Pompion, Cucumber, Melon.

Now, in this list, generally, as already observed, those with the most of nitrogenous matters among their component parts are the first to decompose, and consequently lose their vitality; and those with the greatest amount of starch and lignin, or more carbonaceous constituents, retain their germinating power the longest, and for the evident reason, that such are less prone to decay.

From other reliable sources we learn, that the seeds of the following plants have vegetated after being kept for the number of years affixed in this list:—

Tobacco	10 years.
Stramonium	25 "
Sensitive Plant	60 "
Melon	41 "
Cucumber	17 "

These periods are not conclusive that the seeds would have retained their vitality no greater length of time, but the following results are from experiments much more conclusive:—

Gladiolus psittacinus.—One year old, 42 out of 300; at three years old, 17; and at eight years old, none.

Allium fragrans (Sweet-scented Garlic).—One year, 143 of 300; at three years, 102; at eight years, 4; at fourteen years, none.

Asparagus officinalis (Common Asparagus).—One year, 250 of 450; at three years, 97; at eight years, none.

* Melon seeds, by keeping, improve only in the sense in which gardeners consider the plant improved—viz., less of stem is produced, and the fruit is matured earlier. Whatever checks the development of the early organs, —the radicle and plumule,—produces this effect, and this is effected by age in the Melon seed; its starchy component diminishes in quantity, being gradually converted into albumen, a substance like the white of an egg. This is less easily changed to the soluble matters necessary for the nourishment of the parts of the plant first developed.

† Nitrogen is another gas found largely in the air we breathe; it is a chief part also of ammonia.

Quercus robur (Oak).—At three years, 3 of 30; at eight years, none.

Cucurbita pepo (Pumpkin).—One year, 35 of 45; at three years, 37 of 45; at eight years, 19 of 45; at thirteen years, none.

Tacsonia pinnatifida.—Six years, none of 150.

Matthiola annua (Ten-week Stock).—One year, 203 of 600; three years, 236; eight years, none.

Erysimum Peroffskyanum.—At one year, 234 of 300; three years, 82; at eight years, none.

Lepidium sativum (Cress).—One year, 262 of 300; three years, 195; eight years, 19; thirteen years, none.

Brassica oleracea (Cabbage).—One year, 67 of 150; three years, 11; eight years, none.

Crambe maritima (Sea-kale).—One year, 105 of 300; three years, 6; eight years, none.

Tropaeolum majus (Nasturtium).—One year, 64 of 75; three years, 52; eight years, none.

Anemone coronaria (Anemone).—One year, 46 of 300; three years, none.

Pelargonium sp..—Four years, 15 of 50.

Dianthus barbatus (Sweet William).—One year, 242 of 300; three years, 181; eight years, 2; 14 years, none.

Beta vulgaris (Red Beet).—One year, 146 of 215; three years, 155; eight years, 23; twelve years, none.

Pisum sativum (Pea).—One year, 92 of 150; three years, 94; eight years, 15; thirteen years, none.

Faba vulgaris (Bean).—One year, 71 of 75; three years, 71; eight years, 40; thirteen years, none.

Phaseolus multiflorus (Scarlet Runner).—One year, 67 of 75; three years, 47; eight years, 1; thirteen years, none.

Verbena Aubletia.—One year, 55 of 300; three years, none.

Cichorium endivia (Endive).—One year, 228 of 450; three years, 260; eight years, 139; thirteen years, none.

Lactuca sativa (Lettuce).—One year, 53 of 150; three years, 1; eight years, none.

Daucus carota (Carrot).—One year, 155 of 300; three years, 79; eight years, 1; ten years, none.

Of the seeds which retained their vitality longest, the following are some examples:—

A species of Hibiscus	27 years.
A species of Colutea	43 "
A species of Coronilla	42 "
A species of Dolichos	27 "

These experiments were conducted by Mr. W. H. Baxter, Curator of the Oxford Botanic Garden, and were embodied in a report, made by Professors Daubeny, Henslow, and Lindley, to the British Association for the advancement of Science, in 1857. That our quotations form a very small portion of these very useful and carefully conducted experiments will be appreciated, when we state, that Mr. Baxter tested the seeds of 289 different cultivated plants. One general result of the experiments is, that very few seeds retain their germinating power for eight years; and even if they do then germinate, it is not at all certain that the seedlings would advance into productive growth.

At the same time, let us not be misconceived as saying, that the changes mentioned are the only chemical causes for a seed's shortened or lengthened growing power. On the contrary, we are well aware there are other causes, and for example may be taken many seeds abounding with oil. These, exposed to the free operation of the air, gradually lose their vitality, or power to grow, as the oil they contain becomes rancid—a change produced by its partial conversion into capreic acid. Preserved from the action of the air, no seeds are more retentive of vitality, apparently because, when so preserved, the oil they contain will remain sweet and unchanged for ages. This is the reason that in earth excavated from great depths below the surface, Charlock, Mustard, and such like plants, having oily seeds, are found to have retained their vitality.

In considering this subject, let it ever be kept in mind, that almost every species of seed has a peculiar degree of heat, and a peculiar amount of moisture, at, or approaching to which, its vitality will be excited into action. Therefore, in all observations on the life-retaining power of seeds, and in conclusions deduced from experiment, it must be carefully secured that they have not been excited to those first steps of germination, which steps, if taken and then checked, invariably cause the destruction of a seed's vegetating powers.

This brings us to the consideration of the contingencies necessary to cause a seed's germination.

A certain degree of warmth is essential, for no cultivated plant has seeds that will germinate below or at the freezing point of water. A temperature above 32° of Fahrenheit's thermometer, therefore, is requisite; and the plants of which the seeds will germinate nearest to that low degree of temperature, in this country, are the winter weeds. For example, we have found the seeds of the *Poa annua*, the commonest Grass of our gravel walks, germinate at 35°, and the seeds of Groundsel (*Senecio vulgaris*) would probably require no higher temperature. But, on the other hand, the temperature must not be excessively high. Even no tropical seed, probably, will germinate at a temperature much above 120° F.—(*Journal de Pharmacie*, xxii. 210.)

Other experiments, to ascertain the degree of cold which would destroy the germinating power of seeds, have given as a result, that even the extreme cold at which quicksilver freezes does not destroy the vitality of seeds. It is, indeed, probable that a continuance of such a degree of cold would kill the seeds; but it is not easy to determine this by experiment, as so low a degree of cold cannot be maintained very long. It is otherwise with the influence of heat, for seeds no longer germinate in water at the heat of 122° F. In vapour, it requires a heat of 143½° F. to destroy speedily the vitality of seeds of corn; and in dry air, 167° F. are necessary to prevent these seeds germinating. However, the influence of a high temperature is strikingly different according to its longer or shorter continuance; for a temperature of 95° F., for three days, destroys the germinating power of grain.—(See *Ann. des Sci. Nat.*, 1834, p. 257—276.)

Although seeds unsprouted will bear, uninjured, intense degrees of cold, it is far otherwise when once germination has commenced. A temperature of 32° will then usually kill them.

Every seed, differing in its degree of excitability, consequently has a temperature without which it will not vegetate, and from which cause arise the consequences that different plants require to be sown at different seasons, and that they germinate with various degrees of rapidity.

For example, two varieties of early Pea, sown on a south border on the same day, and treated strictly alike throughout their growth, were about a fortnight differing in all their stages of vegetation.

	Sown.	In bloom.	Gathered from.
Cormack's Prince Albert	Jan. 4.	April 1.	May 14.
Warwick	Jan. 4.	April 13.	May 28.

Adanson found that, under the most favourable circumstances, various garden seeds might be made to germinate in the following very different spaces of time:—

Spinach, Beans, Mustard	.	:	3 days.
Lettuce, Aniseed	.	:	4 "
Melon, Cucumber, Cress	.	:	5 "
Radish, Beet	.	:	6 "
Orache	.	:	8 "
Purslane	.	:	9 "
Cabbage	.	:	10 "
Hyssop	.	:	30 "
Parsley	.	:	40 or 50 do.
Almond, Chestnut, Peach	.	:	1 year.
Rose, Hawthorn, Filbert	.	:	2 "

—(*Familles des Plantes*, i. 85.)

In one instance, M. Adanson certainly must have experimented with old seed, for we have found good new Parsley seed, sown on fresh fertile soil in May, had germinated in two days, and its leaves were above the surface within a week from the day of sowing. Then, again, in the case of Rose seed,—at all events, in the ease of that of the *Dog Rose*,—if the hips be allowed to endure the frosts of winter before they are gathered, the seed will germinate in much less time than is named by M. Adanson. This lesson was probably taught the gardener by nature, for the hips of Roses never shed their seed in this country until they have been frosted.

The gardener should always bear in mind, that it would be a very erroneous conclusion, because a seed does not germinate at the accustomed time, that, therefore, its vegetating powers are departed. No two seeds taken from the same seed-vessel germinate precisely at the same time; but, on the contrary, one will often do so promptly, while its companion seed will remain dormant until another year. M. De Candolle relates an instance where fresh Tobacco seedlings continued to appear annually for ten years on the same plot, though no seed was sown after the first sowing; and the same phenomenon usually occurs for two or three years, when the seeds of either the Paeony or Hawthorn

are sown. Why one seed is more easily excited than another is as yet unexplained, but the wisdom of this one of many provisions for avoiding the accidental extinction of a species in any given locality is readily discerned. An ungenial spring may destroy the plants arising from those seeds which first germinated, but this could scarcely occur also to those of the second and third year, or even to those which were only a few weeks later in their vegetation.

It is not possible to declare a general rule, relative to germinating temperatures, requiring no exceptions, but, in general, for the seeds of plants, natives of temperate latitudes, the best germinating temperature is about 60° F.; for those of half-hardy plants, 70° F.; and for those of tropical plants, about 80° F.; and the necessity for such temperatures depends upon the same causes that prevent the hatching of eggs, unless they be kept for a certain period at a temperature of about 100°. The requisite changes are not produced either in the seed or in the egg, unless it be submitted to the propitious temperature; but why this is requisite to develop the forms, and effect the changes, without which there is no vitality, is a secret at present withheld from man's understanding by their Creator, and we must rest satisfied with the approximate knowledge that caloric is the vast and all-pervading agent he employs to call life into existence.—J.

(To be continued.)

TOADS AND ANTS.

In additional reply to "BUFO," I beg to say, that toads are harmless creatures, and render gardeners much service, by eating or destroying woodlice, beetles, and ants. But, as regards ants, when kept in bounds, they are also useful, for they eagerly hunt after insects injurious to vegetation. I always encourage toads in hothouses, especially among Mushroom-beds, which are subject to woodlice. Unlike frogs, toads prefer dry places to hide in during the day; and, perhaps, the best way to prevent their straying away, is, to treat them kindly, and impress the same on others who wantonly injure them.—J. WIGHTON.

A NEW ARRANGEMENT OF HARDY SHRUBS.

In general, shrubs are planted in the mingled manner, some regard only being given to the height they are anticipated to grow. The tallest—such as the various kinds of Thorns, Laburnums, and others—are planted at the back; the Laurel, Syringa, and Lilac next; followed by the Box, Rhododendron, and Spireas; with dwarf kinds in front. If the shrubbery extends for hundreds of yards, this unmeaning mixture has no variation, but is continued throughout. A certain number of each kind of shrub are ordered, and they are regularly distributed over the whole space, so that the spectator, after examining a few yards in succession, finds the rest are exactly the same. This I call a mixture without variety. In large places, it is true, there is some variety; for there we generally find an American ground, or garden, also a Rose garden, and in many places a Pinetum; but still the common shrubbery is planted in the old mingled fashion.

Loudon lifted up his mighty voice against this absurdity, and recommended a more scientific mode—that of grouping shrubs. He says—"Here one genus, species, or even variety, is planted by itself in considerable numbers, so as to produce a powerful effect. Thus, the Pine tribe, as trees, may be alone planted in one part of the shrubbery; and the Holly, in its numerous varieties, as shrubs. After an extent of several yards, or hundreds of yards, have been occupied with these two genera, a third and fourth—say, the evergreen Fir tribe and the Yew—may succeed, being gradually blended with them, and so on."

No doubt, a grouping system like the above would be far more interesting than the mingling style, if judiciously carried out. Thirty years ago, I was foreman to J. Major, Esq., the Yorkshire landscape gardener. He was engaged to lay out an estate for W. Leatham, Esq., near Pontefract; and there, having free scope, this grouping system was carried out to a great extent. I have not seen the place since, but I have been informed that it did not please the gardener, and that the old mingling system, as far as possible, was resorted to, thus destroying what would otherwise have had a good effect.

I have thus far described, in a brief way, two modes of planting the shrubbery. The first, every thinking man, who has any

experience of the subject, will at once decry; and the second, though commended by a high authority, has some objectionable points, which even Loudon states to be, "That in winter it will present parts wholly without evergreens, and will only be rich in flowers in some parts, as, for example, where the Roses, Spiræas, Mespileæ, &c., are introduced." Nevertheless, it is true, that we have in these days a far greater number of hardy shrubs to plant in the grouping system, than was known when Loudon sent forth the first edition of his "Encyclopædia of Gardening;" and, no doubt, if the grouping system was now carried out by a master-mind, the effect as a whole would be beautiful, and sufficiently varied to suit the most fastidious critic. But I fear such a method would not suit the present age. Our gardening ideas now are more artificial. We love to see art and symmetry in our arrangement of flowers in a parterre—each bed to have its counterpart, or *fac simile*, in the corresponding bed. This highly artificial arrangement affords every season a rich exercise of taste to many a high and noble lady, and requires a corresponding taste and skill in her gardener, to understand and carry out the alterations of arranging the masses of flowers in regard to colour and fitness.

This is a digression, but not irrelevant to my purpose. I proposed, at the beginning of this essay, to give a new arrangement of shrubs, in a more artistic manner than either the old mingled fashion or the more modern grouping mode. I have had this arrangement in my head for several years, and the ideas were somewhat suddenly brought into play the other day, in a conversation I had with Mr. R. Smith, the intelligent gardener to Sir James Watts, at Abney Hall, near Manchester. I was rather criticising a shrubbery in the grounds there, and suggested my ideas on improving its appearance. Mr. Smith observed, "That is the very plan I have been trying to get leave to carry out, and I hope with success." I replied, "I am glad to hear it, and should have great pleasure in seeing the plan effected."

"Well, Mr. Appleby," says the reader, "what is the plan; you are a long time beating about the bush. Come to the point, and let us know without any further preamble." Have patience, my good friend; I have only been clearing the ground for my plan; and, having managed that so far, I am now ready to commence operations.

Supposing, then, a piece of ground is laid out for a shrubbery, and well trenched and drained the previous summer, I would go to some good nursery, and mark good plants of the following, selecting different varieties of each:—

First. 6 Thorns *a*, 6 Laburnums *b*, 6 Cupressus Lambertiana *c*, 6 American Arbor Vitæ *d*, 6 Purple-leaved Beeches *e*, and 6 Hollies *f*. These I would choose tall trees, intending them for the back part of the shrubbery.

Second. I would next choose 6 Arbutus *g*, 6 Chinese Arbor Vitæ *h*, 6 dwarf Hollies *i*, 6 Lilacs *j*, 6 Cotoneasters *k*, 6 Portugal Laurels *l*, 6 Common Laurels *m*, 6 Sweet Bays *n*, 6 Snow-ball trees *o*, 6 Robinias *p*, 6 Irish Yews *q*.

Third. 8 Aucubas *r*, 8 hardy Azaleas *s*, 8 Spiræas *t*, 8 Laurinus *v*, 8 Phillyreas *u*, 8 Roses *w*, 8 Rhododendrons *x*, 8 Berberis *y*, 8 Box trees *z*, 8 Mezereums *aa*, 8 Ribes *bb*, 8 evergreen Cistus *oo*.

Fourth. Select 12 Daphne Cneorum *cc*, 12 Heaths *dd*, 12 Skimmias *ee*, 12 dwarf Roses *ff*, 12 Andromedas* *gg*, 12 Ericas *hh*, 12 Gaultherias *ii*, 12 Polygalas *jj*, 12 Lavendula *kk*, 12 dwarf Rhododendrons *ll*, 12 dwarf Berberis *mm*, 12 dwarf Cistus *nn*.

Having got these all on the ground, which I suppose to be wide enough to contain four rows. I would arrange them as follows. See the corresponding letters at the end of the names above:—

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>	<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>	<i>z</i>	<i>aa</i>	<i>bb</i>	<i>cc</i>	<i>dd</i>	<i>ee</i>	<i>ff</i>	<i>gg</i>	<i>hh</i>	<i>ii</i>	<i>jj</i>	<i>kk</i>	<i>ll</i>	<i>mm</i>	<i>nn</i>
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The last, or front, row should be arranged to allow a yard to each plant; consequently, the first row will have a space of four yards for each. They should be arranged so that the evergreens and deciduous plants will alternate with each other. If the situation will not allow all the species to grow there, others that will grow may be selected. Again, if there is a desire to have an evergreen shrubbery, the deciduous species might be left out, and more varieties of the others introduced. In arranging the adjoining

selection also, varieties should be introduced. For instance, as the first *a* may be a double white Thorn, when that letter occurs again, let it be a scarlet Thorn, and so on through the whole selection. There is almost no end to the variety that might be thrown into a shrubbery laid out agreeable to my plan, as detailed above. I do trust to see it carried out fully, and when that is done, I am pretty sure it will please the owner, and will be generally adopted throughout the empire.—T. APPLEBY.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 232.)

CHERRIES.

Montmorency. See *Gros Gobet*.

Montmorency à Courte Queue. See *Gros Gobet*.

MORELLO (*Black Morello*; *Dutch Morello*; *Late Morello*; *Ronalds' Large Morello*; *Milan*).—Large, roundish, inclining to heart-shape. Skin dark red, becoming almost black the longer it hangs. Stalk an inch and a half to two inches long. Flesh purplish red, tender, juicy, and pleasantly sub-acid. Used for culinary purposes. July and August.

Morestein. See *Reine Hortense*.

Nain Précoce. See *Early May*.

Nouvelle d'Angleterre. See *Carnation*.

OHIO BEAUTY.—Large, obtuse heart-shaped. Skin pale yellow, overspread with red. Flesh pale, tender, brisk, and juicy. Beginning of July.

OSCEOLA.—Above medium size, heart-shaped, and with a deep suture on one side. Skin dark purplish-red, almost black. Stalk about two inches long. Flesh liver coloured, tender, very juicy, rich, and sweet. Middle and end of July.

OSTHEIM.—Large, roundish-oblate, compressed on one side. Skin red, changing to very dark red as it ripens. Stalk an inch and a half to two inches long. Flesh dark red, tender, and juicy, with a pleasant, sweet, and sub-acid flavour. An excellent preserving cherry, not so acid as the Morello. End of July.

Ounce Cherry. See *Tobacco-Leaved*.

OX HEART (*Bullock's Heart*; *Lion's Heart*).—Large, obtuse heart-shaped, flattened on one side. Skin shining, dark purplish-red. Stalk two inches long. Flesh somewhat firm, dark red, with a brisk and pleasant flavour, which is considerably richer when the fruit is highly ripened. End of July.

PARAMDAM (*Baramdam*).—Small and round, not quite half an inch in diameter. Skin pale red. Stalk an inch long. Flesh pale, tender, with an agreeable and lively acidity. End of July. The tree is of very diminutive growth; one in my possession, not less than 100 years old, being little more than seven feet high, and the stem not so thick as a man's arm.

De Palembre. See *Belle de Choisy*.

Pie Cherry. See *Kentish*.

PONTIAC.—Large, obtuse heart-shaped, compressed on the sides. Skin dark purplish-red, nearly black. Stalk an inch and a half to two inches long. Flesh purplish red, half-tender, juicy, sweet, and agreeable. The latter end of July.

POWHATTAN.—Medium sized, roundish-heart-shaped, compressed on the sides, uneven in its outline. Skin brownish red and glossy. Stalk two inches long. Flesh rich purplish-red, half-tender, juicy, sweet, but not highly flavoured. End of July.

Quatre à la Livre. See *Tobacco-Leaved*.

RATAFIA (*Brune de Bruxelles*).—Medium sized, round, and a little flattened at both ends. Skin dark brown, nearly black, and very shining. Stalk an inch and a half

* The Heaths, Rhododendrons, Azaleas, and Andromedas, would require a shovelful or two of sandy peat to each plant.

to two inches long. Flesh dark red, tender, and juicy, with a brisk acid flavour, which becomes subdued the longer it hangs on the tree. August.

Red Heart. See *Gascoigne's Heart*.

REINE HORTENSE (*D'Aremberg*; *Belle Audigeoise*; *Belle de Bavay*; *Belle de Laeken*; *Belle de Prapeau*; *Belle de Petit Brie*; *Belle Suprême*; *Grosse de Wagnelée*; *Hybrid de Laeken*; *Louis XVIII.*; *Lemercier*; *De Meruer*; *Merveille de Hollande*; *Monstrueuse de Bavay*; *Monstrueuse de Jodoigne*; *Morestein*; *Rouvroy*; *Seize à la Livre*).—Very large, one inch and one-twelfth long and an inch wide, oblong, and compressed on the sides. Skin very thin and translucent, at first pale red, but assuming a bright cornelian red, and changing to dark brilliant red the longer it hangs. Stalk very slender, about two inches long. Flesh yellow, netted, very tender, and very juicy, with a sweet and agreeably acidulous juice. Middle of July.

RED JACKET.—Large, heart-shaped. Skin amber, covered with pale red, but when fully exposed entirely covered with bright red. Stalk two inches long, slender. Flesh half-tender, juicy, and of good, but not high, flavour. Beginning and middle of August. Valuable for its lateness.

Rivers' Early Amber Heart. See *Early Amber*.

ROCKPORT BIGARREAU.—Large, obtuse heart-shaped, uneven in its outline, and with a swelling on one side. Skin pale amber, covered with brilliant deep red, mottled and dotted with carmine. Stalk an inch to an inch and a half long. Flesh yellowish white, firm, juicy, sweet, and richly flavoured. Beginning and middle of July.

Ronalds' Black. See *Black Tartarian*.

Ronalds' Large Morello. See *Morello*.

Rouge Pâle. See *Carnation*.

Rouvroy. See *Reine Hortense*.

(To be continued.)

QUERIES AND ANSWERS.

GREENHOUSE SHADED AND FACING THE WEST.

"I wish to erect a small greenhouse for Fuchsias, Pelargoniums, Tea Roses in pots, and to protect a little bedding stuff. I have a wall facing the west, but a building on the south takes away all sunshine from the beginning of November to the end of February. If I erect the house to the west wall, could I grow the plants successfully?"—*GREENHOUSE*.

[If your greenhouse is heated so as to keep out damps, and enable you to give a free circulation of air, you may keep your plants in such a shaded house all the winter; but your success will depend upon merely keeping them from the end of October until the middle or end of February, when the sun will be gaining access to them. The drier and cooler the plants are in winter, the safer they will be in such circumstances, provided the stems are not shrivelled, nor the foliage flagged in the one case, and frost does not enter in the other. An average heat of 40° will be safe, either from danger from cold, or from giving the plants stimulus to grow when there is no sun to consolidate that growth. For summer display, increasing water and heat as the day lengthens, the house will answer well enough, and will be useful as a safe place for bedding-plants. If you want a winter display, you must fix on a better site, commanding more sunlight.]

CULTURE OF VALLOTA PURPUREA.

"I wish to ask your advice how I am to treat the following plant, and to ask if it is possible to have it as fine as I had it last September. It is a pot of *Vallota purpurea*, containing eight bulbs, which threw up fourteen stems of bloom, each truss having from five to eight flowers. It is now, and has been since the spring, in a ten-inch pot, and, after it went out of bloom, placed on a shelf near the glass, and a less quantity of water given to it. A great number of the leaves have turned yellow, and have been picked off; but still there is from two to three leaves on each

bulb, several small bulbs appearing by the sides of the large ones. It was exhibited at one of our local shows, in a stand of three greenhouse plants, where it gained the first prize, and was very much admired. I propose exhibiting it next September, if I can get it up so fine?"—*PHILO-FLORA*.

[Your Vallota met with a sad reverse somehow, otherwise it would have cast no more than a couple of the lowest leaves in one season. It was a magnificent specimen, the largest we ever heard of; but, of course, there are no practical limits to the sizes of such specimens as are made up of more than one plant. The treatment which suits Vallota best, is the same as a handsome pot specimen of *Tomb Thumb* would require, only that *Tom* is much more difficult to grow in a pot than any of the Vallotas. The same soil, drainage, watering out of doors in summer, all the sunlight this part of the world can afford, and the coolest place, away from frost, through all the winter months, will bring both to such a degree of perfection, as is required for exhibitions in town or country. All the true Amaryllises require just the same treatment as Vallota, while they are in growth.]

VINES IN POTS—PLANTING VINES.

"My employer having recently erected a viney, and being desirous of cutting a few bunches of Grapes the first season, we have purchased a dozen Vines, specially for pot culture. The house is forty feet long, with front and back paths; also, a pit, well provided with bottom heat, running along the centre. We have already placed a compost suitable for Vines along the front part of the pit, fifteen inches deep and twenty-four feet wide. Would you advise planting the Vines in this compost—that is, without disturbing the ball any more than is necessary in getting it out of the pot? or should you prefer breaking the pot bottoms, and plunging them?

"Our permanent Vines will not be planted for some time. What month would you recommend for their planting, so as not to interfere with those fruiting in pots—that is, with respect to temperature? The border for the permanent Vines is outside.—E. A.

Judging from our own experience, we should considerably widen the hole in the bottom of the pot, and plunge the pot in the compost for nearly half of its depth or so. This will not interfere with the roots in the pot at all, and, therefore, give no check whatever; whilst strength and vigour will be better secured for swelling the fruit, as, before that swelling period arrives, the roots will have found their way into the fresh soil. When you commence forcing, provided you use your bottom heat, you might cover the pot over with leaves, litter, or even a mat, that the heat at the roots might exceed by 5° to 10° that for the top of the Vine. Thus, supposing that you set these dozen plants into your bed next week, the roots might at once have a temperature of 55°, whilst the heat of the stems should commence at about 45°. Increase the heat of the air gradually in the space of three weeks to from 55° to 60°; but never raise the atmospheric heat above that until the buds are swelling and breaking freely. Let the bottom heat be in advance of the top fully 5°, by keeping the atmosphere moist; and by giving this gradually increasing heat,—not so much at the roots as to injure them, nor so much suddenly at the top as to cause the end buds to push prematurely,—you will succeed in swelling and breaking every bud; and if the wood was properly ripened last season, almost every one of these buds will show fruit. We have seen strong canes break regularly and scarcely showing a bunch, but that was owing to want of maturation the previous season. A gentleman lately complained, that though his purchased Vines, in pots, broke every bud, and looked healthy, there was little or no appearance of fruit. He could hardly see, that in such circumstances the want of the bunches could not with propriety be laid to the fault of his gardener. The breaking every bud, and the health of the Vines, showed that, as respects culture, justice had been given them. We do not think that if the plants were turned out in the beds of soil they would have equal justice as respects fruiting the first season.

On the other hand, were we to grow Vines permanently in such a pit, we would plant them out at once, spreading the roots nicely, and disentangling them out of the round-ball shape, which they assumed in the pot; sacrificing a little advantage, in the way of fruiting the first season, for the ultimate benefit of the plants. Had even these plants been turned out in

September, or the beginning of October, so as to establish themselves in the bed of soil, it would have been different. As fruit this season is the principal object, it will be best to keep the plants in the pots, merely enlarging the hole at the bottom, and surface dressing the pot with rich compost.

In a new house, it matters but little when new Vines are planted. If it had been suitable, we would have preferred the permanent Vines to have been planted and protected, before starting those in pots. Those out of doors, over them, would come away considerably later than those in pots inside; but they would not suffer afterwards in the same temperature. Now, supposing that you commenced your pots in January and February, and planted your permanent Vines in March or April, without any previous excitement, then the temperature inside would be too high for them at first; and if the Vines had previously been started in another place, or even in the same house, then the coldness of the soil in the outside border would check growth by its coldness. In your circumstances, we think it would be best to start your permanent Vines in your house a few weeks after the pot ones; but giving them little or no bottom heat. Pay them every necessary attention, and plant them carefully out at the end of June, or the beginning of July, when the ground, by frequent turning, exposing, and protecting,—such as placing a glass sash over the space,—had been well warmed; what little water that was used being also warm. By shading the tops of the plants a little at first, they would receive little or no check, and there would be plenty of time for the roots to establish themselves in the border, and for the wood to be strong and matured before the end of autumn. By different peculiar modes, you might grow Vines in pots for early produce, and keep these planted-out Vines for the main later crop in the same house. Those thus planted must have the roots disentangled out of the ball, and spread out nicely; and if watered with warm water, and covered with aired warm soil, and that kept warm, if the weather should be cold, no check worth speaking about will be noticed.]

CULTURE OF CLEMATIS LANUGINOSA.

"*Clematis lanuginosa*, just brought in, is in a 48-pot, shooting a little: it comes from a greenhouse; its stem is single, and about two feet long. When should I turn it out, against a south-east wall, little north of London? When planted, and the shoots a little more forward, should I cut it right down to the crown, to within an eye or two, or shorten it only, or leave it as it is for length?"—GREENHAND.

[The way to manage *Clematis lanuginosa*, and all other pot Clematises, at this season, is to keep them just as they are, till about the middle of March; then to give them a shift into a pot one size larger, and to keep them so till the second week in May, when they are to be planted out with the balls entire. But just three weeks before planting-out time, the whole head of each plant is to be cut back to three or four eyes, and sometimes to two eyes, if the plant is weak. That rule holds good with nineteen climbers out of twenty, that are planted out of pots, and to pot Clematises more than any others, and to *cærulea* and *Sieboldi* more still, and to *lanuginosa* in the same degree. Meantime, find out how your plant has been propagated. No doubt, a bud, or joint, of it was grafted on something in the Clematis way; and if it was grafted on the roots of any of the common kinds, you might as well throw it to the dogs at once, for it will never do good that way; and you will be pestered with suckers from the stock as long as you live. Although *Clematis lanuginosa* is one of our very favourite climbers, we would not take it as a gift, unless it was on its own roots, or grafted on the roots of *cærulea*, which never makes suckers, as was said in noticing this plant lately, at the Clapton Nursery, where it is all grafted that way. All kinds of climbing Roses, and Brambles, Glycines, Jasmynes, Passion-Flowers, and, indeed, all pot climbers, would do a thousand times better that same way, than one out of a thousand of them ever does in the common way, of planting them out from the middle of March to the end of April, and of leaving long pieces of the old shoots. Ten thousand Glycines have gone wrong, or never did much good, from the simple fact of one yard of shoot being left, at planting time, instead of one eye at the very bottom. And no climber, that is to be planted out next May, ought to receive one degree of additional heat more than the usual course, during the whole of that spring. Also, the one, two, or three eyes which are left, should start before the plant is turned out of the pot.]

BEE-KEEPING IN DEVON.—No. VIII.

DIMINUTION OF NUMBERS IN WINTER—FEEDING DEPRIVED BEES—FABRICATION OF COMB—DISCREPANCY BETWEEN QUANTITY OF FOOD GIVEN AND THAT ACTUALLY STORED—RETURN FROM THE HEATH—TABLE OF WEIGHTS—RESULTS.

The box of deprived bees, of which such frequent mention has been already made, and which now contained the inhabitants of four stocks, was brought from the heath on the 20th of September, and placed under the south-east verandah referred to in my first communication. The net weight of the entire contents of the box being only 5½ lbs. (not greater than that of a large swarm), affords a striking illustration of the extraordinary diminution which takes place in the population of bee-hives as the working season draws to a close.

Not doubting, therefore, that these unfortunates were really on the brink of starvation, I lost no time in administering such a supply of food as might enable them to store up sufficient for the winter's consumption. Referring to that excellent little manual, "Bee-keeping for the Many," I manufactured a quantity of bee-food after the manner therein prescribed—viz., "three pounds of (lump) sugar to a pint of water, boiled for two or three minutes;" flavoured, however, with rather a less quantity of honey than is directed by Mr. Payne. Presenting this food to the bees—on the top of the hive—in a feeding-pan, which was duly filled every night, and as regularly emptied by them before morning,—none, however, being given in the daytime—it was interesting to watch the ardour evinced by the industrious insects, in extending and storing their scanty combs; nor can I doubt, that had the supply continued, the box would speedily have been completely furnished. At the expiration of a week, I found the hive about two-thirds filled with comb, mostly sealed, and perfectly white, and the net weight increased to 16 lbs. Deeming this sufficient to last till spring, I discontinued the supply, upon which the festoons of wax-workers speedily disbanded, and, the previous excitement having rapidly subsided, the colony assumed the quiescent appearance natural to this advanced period of the year.

It will be perceived that the actual increase was about 10 lbs.; but, to effect this, from 17 lbs. to 18 lbs. was given, of which 12 lbs. was lump sugar. Does not this discrepancy, between the weight of food administered and that actually stored, speak strongly in favour of the correctness of the conclusion arrived at by Huber, that from a pound of refined sugar only about one-twelfth its weight of wax can be produced? I may add, that I had the curiosity to weigh the bees, both morning and evening, during three days whilst feeding was going on, and found them, invariably, half a pound lighter every evening than they were in the morning.

The return of the seven hives, originally conveyed to the heath by myself and friend, took place on the 2nd of October, without accident or incident worth relating; the shaking experienced on descending being nothing in comparison with that sustained in ascending the high ground to which our hives had been so long banished.

Subjoined is a table of the weights of my four hives up to this time, repeating that of the 31st of August, when three of them had been twenty days on the heath, and when, also, they appear to have reached the culminating point:—

Date.	No. 1.		No. 2.		No. 3.		No. 4.	
	Ibs.	ozs.	Ibs.	ozs.	Ibs.	ozs.	Ibs.	ozs.
August 31.....	20	8	21	4	22	4	0	0
September 13*....	21	6	20	8	22	0	6	4
" 20	20	12	20	0	21	12	5	12
October 2	19	12	18	8	21	0	16	0
November 13	17	4	16	0	18	8	13	8
December 23	16	4	14	12	17	0	11	14
" 29	16	0	14	8	16	12	11	10
January 7	15	10	14	2	16	6	10	14

With regard to the results of my experiments, so far as they are apparent, there can be no doubt that the journey to the heath has resulted in my stocks being much heavier than if they had remained at home. On the other hand, I am of opinion, that their removal each way was too long deferred. The population in every hive has diminished far below anything I have before experienced, and this evil has only been partially mitigated by doubling two of them. Taking this fact in conjunction with the paucity of bees already mentioned as being observed in six different stocks driven by me in the neighbourhood, I am

* The apparent increase in No. 1, and trifling diminution in No. 3, at this date, is owing, probably, to the population of these stocks having been doubled since the former weighing.

disposed to ascribe it to loss of life, arising from accidents whilst honey-gathering late in the season, and believe that had the removal to the heath taken place three weeks earlier, the stocks would have become much heavier, and that had they returned a month sooner, they would have been far more populous than they are now.

Respecting the comparative advantages of seven-bar and eight-bar boxes, I do not think my experiment proves much either way. I shall not fail to continue my observations on this point during the winter, and in the spring, when, possibly, some more definite conclusion may be submitted to the readers of THE COTTAGE GARDENER by—A DEVONSHIRE BEE-KEEPER.

FAILURE OF THE CALCEOLARIA.

IN common with so many of the subscribers of THE COTTAGE GARDENER, I may testify to the apparent approximate failure of that valuable class of ornamental plants, the Calceolaria. In 1856, 57, and 58, I was driven to the necessity of having the Calceolaria beds in my geometrical garden frequently re-furnished. The bedded plants went off, one after another, without any apparent corresponding cause. This year, however, I was determined, if possible, by a severe investigation, to ascertain the cause of this recurrence of failures; and what I found was this, that the bark of the main stem—about earth and air point—was eaten away all round. I found the same result with all the damaged plants. This, no doubt, was done by some insect, which, leaving his hiding place at night, went about committing these ravages. I could not discover any grub, or other enemy, at the roots; and my conclusion is, that the death of the plants resulted from a rapid exhaustion of sap, its circulation being impeded by this circular arrest of progress. The roots were, in all cases, round, full, and manifold.—AN INTERESTED SUBSCRIBER.

[This, apparently, was a case of shanking, and not of destruction by underground grubs. We recommend to this correspondent the notes on Calceolaria culture published in our last Number.—EDS.]

TO CORRESPONDENTS.

TREE PEONY (*W. Badock*).—Do not ask so many questions at once. The Tree Peony will bloom nicely in such a house; but give it plenty of air when the buds are swelling. It will do all the better, if you can retard the swelling of the buds until the end of February, or the beginning of March, by keeping the plant in the coolest end of the house. By that time you may expect more sunlight than we have had lately, and that will give the flowers colour. You may either keep the plant in a pot, or plant out in the beginning of summer. The plant forces nicely in the spring, and in March and April, and onwards, they are very brilliant things in a greenhouse. In a house at 50°, we would keep it at the coolest end, if the buds are not much swelled. If they are swelling freely, keep it at the warmest end until nearly opened.

HOYA CARNOSA (*Idem*).—We have grown this, the best of the Hoyas, when the temperature in winter ranged from 38° to 45°, with a rise from sunshine. You will succeed admirably, with an average temperature of 50°. The great thing is, to give no more water, in winter, than will just keep the thick leaves from shrivelling. In summer, water when growing, and in proportion to the heat and the force of the sun's beams. In autumn, give every ray of sunlight possible, and no more water than will prevent the leaves being injured. In winter, as mentioned, refrain from water altogether. If the atmosphere of the house is at all moist, the leaves will absorb as much moisture as they will perspire. As the sun gains power, syringe the plants frequently before watering much at the roots; and if the plants were well exposed to the sun in summer and autumn, the flowers will come plentifully in spring and summer. *Epiphyllums* or *Peristia* manage much in the same way. As they have done blooming, place them at the warmest end of the house. If the stems are at all yellow and shrunken, syringe and moisten them, instead of watering much at the root. If it grows nicely in summer, you may transfer it to a six-inch pot, in compost of equal parts of rough lime rubbish, fibry loam, and dry nodules of old cowdung, and water as wanted until September; then expose as fully to the sun—indoors, or out of doors—as possible, and give no more water than will keep the leaf-like stems from shrinking and shrivelling, until they show flower, when they should have the most open part of the house, and moisture given to swell out the flowers nicely. By looking at your stock, you will easily perceive that it is too woody and dry for such a succulent as your *Epiphyllum*; in fact, the grafts seldom thrive for many years. If its head gets large, it often, in self-defence, begins to throw out roots into the air—a sure sign that enough of sustenance is not obtained from the stock. If you wish to have plants, that under fair treatment will be getting better every year, either get or raise from good-sized cuttings plants of *Cereus speciosissimus*. When established in small pots, cut them across at the height you like, in spring; slip the knife for one inch down the centre, take a small piece of the *truncatus*, and slice a thin piece off each side, making it like a wedge, and insert in the opening, keeping it there by sticking one of its own spines, or thorn spine, through the two sides of the stock, and the scion in the middle, and placing round it a string of matting and a little moss, to keep all shaded. The scions may also be inserted along the side of a plant, in the same way.

TROPHÆOLUM JARRATTII (*Idem*) as well as *tricolorum* are beautiful things. Place them both in a small pot, and keep in the coolest end of the greenhouse until they begin to grow. The shoots will be very fine at first. If the bulbs are strong, transfer the plant with its roots then, to a pot of eight or twelve inches diameter, and into a rough compost, consisting of fibry loam, fibry peat, nodules of charcoal, and cowdung dried, all well drained, and the compost lightened with silver sand. Training must commence at once, if the plants are to look well.

CEDAR (W. B. Barton Constable).—Mr. Beaton says, that the Cedar you sent is just like the growth of the Deodar Cedar, when it is close pruned, or gets cramped in some way or other. A friend of ours had to prune in very close, on one side, a whole row of Deodars next a terrace, and, behold! in two or three years they all turned to be like Cedars of Lebanon. Yours are in the intermediate state, and will be Lebanons too, some day, if you cannot get them pushed along, by adding strength to the roots.

VERBENA CUTTINGS (An Amateur).—Early spring cuttings of Verbenas—one only in a pot—would be fit to show and take a first prize in September; but then the grower would need to have his wits about him, and stop them till they were bushy, and as wide as the bottom of a bushel, and not let a flower-head come in sight till the beginning of August. As to China Aster, we have said a score of times that prizes might be got by sowing and rearing them just like Celery, till it is fit for, the trenches, and then to turn the tune to the Cape Broccoli system, and not to spare liquid manure after that change.

HEATING A ROOM CONTAINING 2,730 CUBIC YARDS (P. B.).—We cannot satisfactorily answer your question for your premises, as 2,730 square yards can only have reference to the width and length of your room, and leave us in ignorance of its height; as, also, of what the sides are composed; as a wood, or even a brick wall, will not allow the internal heat to escape, like glass walls, or many windows. If the room is rather low, and there are not many windows, then if the thermometer outside ranged from 18° to 24°, you would have heat enough. If the sides are open, and the roof high, and must have the same invariable temperature of 58°, then it would be desirable to have some fifty feet more of pipe. A saddle boiler, two feet and a half in length, thirteen inches or so deep, and about the same in width, would heat that quantity of pipe, and as much more, if it was wanted. If you give us more precise details, we will try and be more explicit.

VINES IN POTS (Blackburn).—Try and write explicitly. We know that you have a house thirty feet long, and nine feet wide, a path in the middle three feet, and a plunge-bed on each side three feet wide, and also that there are two four-inch pipes on each side; but whether these are beneath the plunge-bed, or free of all beds, we do not clearly know. If below the bed, it would be better for a chamber of stone, or of clinkers, to be over them, and openings from that into the air of the house as desired. That will be better than wooden boxes placed in the bed, though they will do, if properly managed. If these pits are independent of the beds, then the heat you give must be from other sources. See what has been said to-day, in answer to another correspondent (*R. A.*), as to starting Vines in pots. There is no difficulty in forcing *Muscot of Alexandria* Vines in pots, more than in forcing *Hamburgs*, or *Sweetwaters*, only they require more time, and more heat, to finish them off. For early work, they are not, therefore, the most suitable; but most people would rather eat one good berry of a *Muscot*, than half a dozen of any other kind. Push them on slowly.

ORCHARD HOUSE (A Country Subscriber).—If you devote your fruit border to dwarf trees and shrubs, there will not be much room for vegetables, except between. We would plant nothing in that border that required deep digging. A few early Peas might be obtained, without hurting the roots of trees. The time the borders mostly require to be clear, is in autumn, that more sunlight, direct and by refraction, may strike against the wall. If you have space, and have nothing to shade them, the Strawberries will do as well, and require less trouble, if grown on the border, provided they are near enough to the glass. If in pots or boxes, you could easily move them as you liked; and one advantage would be that you could bundle them out as soon as they were done with.

KADSURA JAPONICA (M. F.).—We should have liked to have known where and how you grow this plant, as it is not considered hardy. Did you give it greenhouse treatment? In pruning, encourage these little, stiff shoots, and keep rather dry in winter before the flower-buds appear. Most likely your plant requires a check—less luxuriance and more sunlight.

BERBERIS DARWINII (M. F.).—This shrub is neither particular as to position nor soil. We have had, and seen it fine against a wall, where it blooms early, and continuously in the open flower garden, in peaty soil, in strong loamy soil, and in sandy soil, and we have just been informed it grows and blooms beautifully on the chalky soil near Winchester.

SOIL FOR ORANGE TREES (A. B.).—One half of fiby, brown loam, well aired, without destroying the fibre; the other half of dried leaf mould, heath soil, dried cowdung, charred pieces of wood, lime rubbish, and silver sand, in nearly equal proportions. When fairly occupying pots, or boxes, give rich top dressings and manure waterings. A good loamy soil, and a little leaf mould, will grow them well.

CELERY STALK HEARTED (—).—The reasons for this complaint, which you annoy so much, are twofold. Either you have planted out too early, from too early sowing, or in the late hot summer you neglected shading and watering, or, what is rather worse still, earthened up your plants too early. The most seed of stalk-stemmed Celery is produced by the last cause.

MODEL HOOTHUSES (Dingwall).—From Capt. Dalgety's day to this, here is the way many of these Lowland bodies would have us of the Highlands believe that they are so much better off, and superior to their betters. But, if you believe me, the last time I was in this Dingwall, I am free to give my aith, that all the hothouses there could very easily be managed by a kilted gardener from Strathconon. Then, about the climate being cold. Why, Dingwall is on a level with Inverness and Perth, in cold, heat, and elevation; and as to the blast from Ben Wyvis touching them, you might just as well assert that the blasts from Arrarat "deals" with the dwellers in Mesopotamia, in their "horticultural pursuits." With the exception of Perth, Dingwall is the most favoured place in the kingdom, for climate and scenery, for the natives therof; and it is the healthiest place in the island; the finest and most fashionably resorted-to springs, to which those of Bath and Cheltenham are mere suds, being in the imme-

diate neighbourhood. It must be for the use of the Sasseachs who frequent Strathpoffer Wells, that the people of Dingwall want hothouses, and all this grandeur; and to back them up to it, with heart and hand, Donald Beaton has been to the Crystal Palace,—a much colder place, by the bye, than Dingwall,—and seen what Mr. Eyles has done in the way of a model hothouse. But as to the consumption of smoke, people must read the last Acts of Parliament about it.—D. B.

GLAZING ROOFS (An Old Subscriber).—When the parties have advertised we shall have something to refer to.

ABELE POPLAR (C. P. C.).—Any nurseryman could get it for you. We always give replies without avoidable delay.

WORKS ON BOTANY (S. Tatton).—Buy Henfrey's "Rudiments of Botany," and Hogg's "Vegetable Kingdom."

APPLE MILDEW (R. R.).—We cannot give advice, as we do not know whether the trees are on the open ground, or under cover. Nor do you tell us anything about the soil.

DOUBLE PRIMROSES (A. Subscriber).—Apply to some of the respectable florists who advertise in our columns. We cannot recommend one in preference to others.

MUSHROOM CULTURE (T. Page).—Buy our No. 521, and you will find there find "Mushroom culture simplified," by Mr. Errington.

NAME OF PLANT (F. W. F.).—We believe, but we are far from being certain, that your trailing plant is *Polygonum complexum*.

WORK ON BRITISH MOSESSES (F. W. G.).—Stark's "Popular History of British Mosses," which may be had by enclosing 10s. 6d. in stamps to Mr. F. S. Angel, 11, Lovel's Court, Paternoster Row, E.C.

MAGNOLIAS GRANDIFLORA AND PURPUREA (F. J. Wilkin).—If the "north-west" aspect is against a church, or a tower, or a railway station, or an iron foundry, or a prison wall, or a hill, or a mountain, or a bank, or a brae, it makes all the difference, and "if" your *Magnolia grandiflora* is not too green, that also makes the difference more still. There are very green Magnolias that never flower satisfactorily, because perhaps they are green on both sides of the leaves; and others are green on the upper side, and rusty brown below; and to make amends for this foxy appearance, they flower magnificently; and we should think they might do so on any aspect so near London. The flowers of *Magnolia purpurea*, which is a dwarf shrub, by the bye, are neither sweet, nor scented, nor bad smelling; and the best soil for Peaches, Plums, and Apricots, is the best for the Magnolias; but *purpurea* will do entirely in peat. Pray get a nice half-standard of *Magnolia conspicua*: it is an open-border, spring-blooming plant, which never fails, in your latitude, to bloom yearly.

NAMES OF FERNS (J. Thomas).—Your Ferns are:—1. *Polystichum proliferum*, warm greenhouse Fern, from Van Diemen's Land. 2. A sterile, frond of *Doodia caudata*, a pretty greenhouse species. 3. A small sterile, frond of *Niphobolus Lingua*, sometimes called *Niphobolus Chinensis*. 4. A *Lastrea*; but specimen too imperfect to be certain what species it is. (*Boughapricy*).—The specimens are variations of the same Fern, *Trichomanes brevisetum*. (M. G.).—Your Fern is the *Asplenium adiantum-nigrum*, the Black Spleenwort. The *Centaurea ragusina*, or Cretan Centaury, is a bold-hardy, under-shrubby plant, very rarely to be seen in gardens; but, without doubt, it is to be found in some of the nurseries in and around London, where there is a pride in keeping up a good collection, or selection, of plants, particularly where there is respect and regard for old favourites. This ornamental and curious old plant is a native of Candia, and of several places on the coasts of the Mediterranean, both in Europe and Africa, and was introduced to this country in the year 1710. Those who keep it should always have a plant or two in pots, for winter protection, in the frame or greenhouse, where it looks both curious and pretty amongst the other plants with green leaves; and, as Miller says,—"If planted in dry lime rubbish, it will bear the cold of our ordinary winters in the open air, and is readily increased by slips or cuttings, planted in a shady border under a handglass, during the summer months."

was wanted for some other purpose the following day. This was the death of many Shows. There was an amount of exertion required, that all the enthusiasm of the most ardent amateur could not afford. Many, again, that were projected have not been carried out, because a locality could not be found wherein to hold them.

In this respect, the Crystal Palace is very fortunate. The wing in which the Show is held is perfect for the purpose. The change effected previous to the last summer Show did great credit to the discrimination of Mr. Houghton. When it was held at the entrance to the building, there were many inconveniences. Visitors passed up one side, while the Judges were at work on the other, and at times the crowding became so great as to be an objection to many. Then, again, the inspection of a favourite pen became an impossibility: the stream of visitors coming in or going out rendered it almost impossible to remain stationary.

The present arrangement renders it the most comfortable Show in England, and the poultry world has its wing to itself. Hitherto, the progress of this Exhibition has been continually onwards, and its increase is both in quality and numbers. The Show of which we treat produced 1,117 pens, and almost all were of the highest merit. As the notice of the different classes must occupy considerable space, we must now close introductory remarks, and proceed at once to comment on them.

Seeing the numerous entries of *Spanish* on former occasions, it was wisely determined to increase the number of the prizes offered, and accordingly four were substituted for three. They brought out the *élite* of exhibitors from every part of the kingdom. The first-prize birds of Mrs. J. C. Hall were very meritorious, but they were not in as high condition as many of their competitors. All mentioned in the prize-list were excellent.

There was a good Show of *Hens* in the new class for two, shown without a cock. Thirty-seven pens competed for the *Chicken* prizes, and these alone formed a beautiful Show. Miss Rake's birds well supported their fame. The weakest class, and one that greatly disappointed us, was that for *Two Pullets*: there were only four entries. Amends were made by the *Single Cocks*: they were thirty-four in number, and many beautiful birds among them. The Show, then, of Spanish was highly meritorious. We must, however, speak in terms of censure in some cases. Trimming was flagrant, and led to the disqualification of many pens that would otherwise have figured in the prize-list. Before we leave this breed, we are bound to notice the pens of Miss Rake, and Messrs. Botham, Fowler, Wells, and Rodbard. They deserve especial mention.

The immediate vicinity of the Palace to the counties more especially noted for *Dorkings* may account for the great numbers of these birds: there were 208 pens. The greatest success in this class was achieved by the Hon. W. W. Vernon, who took first and second prizes with wonderful birds. There were nineteen prizes to distribute among these pens, and the distinction between the prize-takers and some of the commended was so small, that it was only by much painstaking and handling that the awards could be made. We are bound especially to mention the class for *Hens*, where we should say that eighteen were shown such as had never been seen before in competition. The *Single Cocks* were also a most remarkable class. All the prize and commended birds more than deserved their distinctions. Messrs. Lewry, Joshua, Punchard, Wakefield, and Robinson may well prize their birds.

The *White Dorkings* again showed the increased size we have noted. Mr. Robinson was successful in both classes, but in different degrees. Captain Beardmore and Mr. Keable took the others.

The old *Cochins* were better than the chickens. This has been observed at many Shows this year. Perhaps the sight of Mr. Tomlinson's splendid pen, which here repeated the Birmingham victory, may make others look less meritorious. We have again to say, we have never seen a bird so well-shaped in our lives. Many exhibitors may match the hens, but the cock, in his present condition, appears unique. We would not be thought to speak lightly of the birds belonging to Messrs. Moore and Stretch: they were excellent. All last year's *Cochins* appear to be late birds, and their progress has been small since the summer Shows. Mr. Stretch, in *Chickens*, took his old position as first, followed by Miss Musgrave and Rev. G. Gilbert: they were better in colour than the adults. We miss the beautiful Lemon birds: nearly all have a cinnamon shade. The class must, nevertheless, be considered a good one.

The *Grouse* and *Partridge Cochins* are every day becoming better

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JANUARY 18th, 19th, and 20th. CHESTERFIELD AND SCARSDALE. Secs., W. M. Hewitt, and J. Charlesworth. Entries close January 4th.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Pitman, Esq.

N.B.—Secretaries will oblige us by sending early copies of their lists.

CRYSTAL PALACE POULTRY SHOW.

ONE of the great essentials of an Exhibition of this sort is a proper locality. Many Committee-men could explain the trouble they have had to meet with one, and the hard conditions that have been imposed on them. We have seen a whole Committee at work, unpacking in one part of a hall, while workmen were putting up pens in another. All were at their labour during the whole of the night, because they could have the building only for a certain number of days in the week; and the nocturnal toil had to be renewed the moment the Show closed, because the building

and more numerous. Having said this, we must reremark, that there is a tendency every year to breed these birds lighter, and many have a yellow shade all over the breast. When it was insisted upon, that the cocks should have black breasts, it was soon done; and we do not despair of seeing next year pullets with breasts matching the backs in colour. Good names were the prize-takers—Messrs. Moore, Busst, and Cuttell; Mr. Stretch first and second, and Mr. Punchard third.

Mr. Copple's is a fine pen of old *White Cochins*, and easily won the prize for adults. They would also appear to be true breeders, as the same name was first in *Chickens*, Mr. Lamb being second. It is a satisfaction, in this class, to note the disappearance of green legs. There was a novelty shown in each class—birds with a light ash-coloured spangle on each feather.

There was a great struggle in *Cochin-China Cocks*, and many old names were behind. Mr. Dawson and Mr. Gibbs, jun., showed birds that richly deserved the prizes.

Brahma Pootras were next in the list, and better classes were never seen. A star that has shone with brilliancy throughout the year here suffered eclipse—Mr. Fowler did not appear among the prize-takers. Mr. Botham took three prizes; Mr. Teebay one, and Mr. Craigie both for *Cocks*. All these classes were of the greatest merit.

Wherever *Game Fowls* are shown, they are sure to be in perfect condition. Much of this may be attributed to their nature, but more to the knowledge that loose-feathered birds have no hope of success. There is also a latent love of the fighting trim, and in most places where they are kept, there are traditions as to the mode of feeding and getting into condition which are still followed successfully. The present Show was no exception, and all the classes of which we shall now speak abounded with beautiful and high-conditioned specimens. The Rev. G. S. Cruwys and Mr. Matthew headed the adult *White* and *Piles*; Mr. Whittaker was third: but this class was not equal to the chickens and the cock in Mr. Camm's pen, which was certainly the best white bird we have ever seen: it is much to say of him, that he would stand well in competition with any other colour: Messrs. Monsey and Sabin followed. Mr. Gilbert Moss was first with *Black-breasted Reds*—an easy victory, although Messrs. Ballard and Swann, the other prize-takers, showed excellent birds. The *Chickens* formed a monster class, and Dr. Sewell had first and second, hard run by Mr. G. Moss for third. In this, as in other classes, we do not omit the commendations because they are not worthy of especial mention, but because our space will not allow us to extend our report. Mr. Parry's pen, in Class 27, as well as Mr. Cruwys' and Mr. Ballard's, were excellent. We must, however, say more for the pen of *Black* birds shown by Mr. N. M. de Rothschild: they were the best we have ever seen, and their success was easy, although Messrs. Ballard and Dawson showed good birds. The *Duckwinged* were, as a class, very true to colour. Mr. Doncaster was first in both, but Mr. Moss, who was second, run him hard (this prize was, by mistake, put in the prize list to Miss Reynolds). Mr. Ballard again took honours in this class, as did Messrs. Felgate and Attwood. Then, to conclude the Game classes, came one of rising importance and magnitude, *Single Game Cocks*. Our readers may judge of its merit by the number of high commendations that were awarded. A well-known name, Mr. Edward Archer, was first; Mr. Bradwell, second; and the Hon. W. Vernon, third. We have now done with these beautiful birds, save that we would make one remark. From observation, we know, that in looking at these classes, exhibitors are entirely led away by the cock, and form their opinions from him alone; but it should always be recollect that the whole pen competes.

All the *Hamburg* classes were good, and perfect pens were not wanting in each. In many of the *Golden-pencilled* hens, there was, however, an indistinctness of pencilling which is fatal to success. The plumage was mossy. Mr. W. Worrall was first in both classes. His birds were beautiful. Messrs. Titterton, Pierce, Clayton, Martin, and Oxley, also deserve especial mention. Taken as a whole, if we except Mr. Archer's birds, the Silver were not equal to the Golden. This gentleman took half the prizes, including both the first. Mr. Griffiths showed an excellent pen, and Messrs. Bennett and Keable were deservedly prize-takers. Messrs. Martin and Bennett easily took the *Cock* prizes. Birmingham, in the persons of Messrs. Lane and Davies, took all the adult prizes for *Golden-spangled*. These, and Mr. Worrall's first-prize *Chickens* are beautiful birds. We have seldom seen better. Mr. Chune took the third prize. The *Silver-spangled* were strong in both classes. Messrs. Camm, Carter, Teebay,

Chune, Pierce, and Chadwin, were successful, and we think the *Spangled* were better here than at Birmingham. The *Single Cock* class added another prize to Mr. Worrall's list, and one for Mr. W. Cox, of Brailsford.

Polands mustered in goodly numbers, and the *Black* with white topknots were beautiful; all the old names will be found—Dixon, Ray, and Batty, are assurances of merit. In *Golden*, Mr. Dixon was first and third; Mr. Adkins, second. In *Silver*, Mr. Greenall was first and second; and Mrs. Pettat, third. All these were excellent birds. Messrs. Adkins and Crane were successful with *Cocks*.

The *Various* class was certainly better than common, and many beautiful varieties were shown.

We have not seen so many good *Golden Sebright Bantams* for many years. Messrs. Punchard and Cruwys took the prizes.

The *Silver Sebright Bantams* were numerous, but not good. There was no fault in them as Bantams, but every succeeding Show only convinces us more, that the real *Silver*, as we knew it years ago, has disappeared.

The *White Bantams* were good, but do not call for any particular remark.

The cock in the prize pen of *Blacks*, was perfect: he had a faultless plumage, a deaf ear—like a new threepenny piece, and carriage as saucy as could be wished. The whole class was superior to the *Whites*. Mr. Sykes' pen was also very meritorious.

The *Game Bantams* were very good, but, in this instance, the *Duckwings* were inferior to the *Black-breasted Reds*. Ten out of twenty-one pens figure in the prize lists. Messrs. Griffiths and Monsey richly deserved their prizes, and had there been more, the Judges would have had no difficulty in awarding them to deserving pens.

Mr. Fowler was at the head of the *White Geese*: his pen weighed 56 lbs. Mr. Williams, of Reading, was deservedly second. Of late, the *Grey* always outweigh the *White*. Mr. Fowler was again first, weight, 73 lbs.; Mr. Edwards, second, 59 $\frac{1}{2}$ lbs. This was a very meritorious class.

We must also speak in terms of commendation of the *Aylesbury Ducks*. Mr. Weston, first, 23 $\frac{1}{2}$ lbs.; Mrs. Seamons, second, 22 lbs.; Mrs. Fookes, third, 20 lbs.

The *Rouen Duck* class was large and good. Mr. Punchard came out again where he formerly reigned, and won with a pen weighing 20 lbs. Mr. Braikenridge, second, 19 $\frac{1}{4}$ lbs. Mr. Breavington, third, 17 $\frac{1}{2}$ lbs. Eight pens will be found in the prize list.

The new experiment of a *Buenos Ayrean* class was successful. There was a good show of most excellent birds. Mr. Bartrum's pen was perfect, closely followed by Mr. Ballance, and Miss Steele Perkins.

The class for *Any other Breed* brought beautiful specimens of *Mandarins* and *Carolinas*; and grotesque, in a pen, each bird of which had the pinion reversed, and sticking up from the back, like the wings of a flying fish.

The *Turkeys* were marvellous in weight. There were cocks weighing 26 lbs., and hens varying from 12 lbs. to 16 lbs. each. There was also the novelty of *White* birds, strong and in high condition, and weighing so as to entitle them to appear in the prize list.

A pleasing duty only remains. It is to bear testimony to the good management and zeal of Mr. Houghton. He was indefatigable, and at twelve o'clock, on Thursday, we are able to bear testimony, that but twenty or thirty pens remained to leave. We are also very happy to be able to say, the birds remained during the Show, and were despatched, in the highest condition.

We last week published the prize list. The following were those who received commendations:—

SPANISH.—Highly Commended, G. Botham, Wexham Court, Slough; E. L. Corker, 34a, High Street, Croydon; Mrs. Pattisson, Maldon. Commended, W. Bailey, Lower Kennington Lane; W. R. Bull, Newport Pagnall; T. Sheen, 90 $\frac{1}{2}$, Holborn Hill. Hens.—Highly Commended, W. Bailey, Lower Kennington Lane; J. H. Craigie, Woodlands, Chigwell. Commended, J. K. Fowler, Prebendal Farm Aylesbury. Chickens of 1858.—Highly Commended, W. R. Bull, Newport Pagnall. Commended, W. Bailey, Lower Kennington Lane; J. Busst, jun., Walsall; S. H. Hyde, Moss Cottage, Ashton-under-Lyne; D. S. Moore, Teddesley House, Walsall; R. Wright, 2, Porter's Row, Holloway. Cocks—Highly Commended, Sir Joseph Paxton, M.P., Rockhills, Sydenham; T. Dunnage, Muswell Hill; P. A. Eagles, Goudhurst, Staplehurst; W. Moore, Hanley Castle, Upton-on-Severn. Commended, J. H. Cuff, 10, West Smithfield; Miss M. L. Rake, Brandon Hill, Bristol.

DORKING (Coloured).—Highly Commended, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescot; Rev. J. Boys, Biddenden Rectory, Kent; Mrs. H. Fookes, Whitechurch, Blandford; E. Gray, Parham; C. H. Wakefield, Malvern Wells. Commended, G. Chadwin, Tollard Royal, Salisbury; Lieut-Col. Clowes, Froxmer Court, Worcester; J.

DREWRY, Newton Mount, Burton-upon-Trent; Mrs. Green, Lower Cheam; Mrs. H. Verey, Marden Lodge, Godstone Road. *Hens*.—Highly Commended, S. Burn, 1, East Terrace, Whitby; J. K. Fowler, Prebendal Farm, Aylesbury; C. H. Wakefield, Malvern Wells. *Chickens of 1858*.—Highly Commended, Hon. W. W. Vernon, Wolseley Hall, Rugeley; C. Fielder, Sparsholt; Mrs. Franklin, Moulton Paddocks, Newmarket; W. Hook, Bulstrode Park, Slough; II. Lewry, Rose Cottage, Staplefield; H. Lingwood, Needham Market; J. Shaw, Hunbury Hill, Northampton; C. H. Wakefield, Malvern Wells. Commended, S. C. Baker, The Pheasantry, Beaufort Street, Chelsea; R. Boys, Eastbourne; J. Frost, Parham; S. Lewry, Ashington Common, near Steyning; C. Revett, Purham; J. Robinson, Vale House, near Garstang; H. Townshend, Stretton-on-the-Forest; J. G. Woodcock, Railway Station, Worthing. *Pullets*.—Highly Commended, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescot; S. Burn, 1, East Terrace, Whitby; J. K. Fowler, Prebendal Farm, Aylesbury; — Franklin, Moulton Paddocks, Newmarket; J. Simmons, Rainham, Sittingbourne; C. Smith, Durnford, Salisbury.

DORKING (White).—Commended, N. Antill, Portsea; H. Lingwood, Needham Market. *Chickens of 1858*.—Highly Commended, Capt. Beardmore, Uplands, near Fareham, Hants; H. Lingwood, Needham Market, Suffolk. Commended, J. Robinson, Vale House, Garstang.

DORKING COCKS (Coloured and White).—Highly Commended, Rev. M. Amphlett, Church Lench Rectory, near Evesham; G. Botham, Wexham Court, Slough; S. C. Buttrum, Burgh Mills, Suffolk; J. Drewry, Newton Mount, Burton-upon-Trent; H. Lingwood, Needham Market, Suffolk; Mrs. Pattisson, Maldon, Essex; J. Robinson, Vale House, near Garstang. Commended, Sir Joseph Paxton, Rockhills, Sydenham; Capt. Beardmore, Uplands, near Fareham, Hants; T. Johnson, The Reddings Farm, 183, High Street, Cheltenham; H. Lingwood, Needham Market, Suffolk; Mrs. H. Verey, Marden Lodge, Godstone Road, Surrey.

COCHIN-CHINA (Cinnamon and Buff).—Highly Commended, R. W. Fryer, Hinton Road, near Hereford. Commended, Rev. J. Boys, Bidderden Rectory; J. Cattell, Moseley Wake Green, near Birmingham; J. T. Sigston, Welburn, near Castle Howard, York. *Chickens of 1858*.—Highly Commended, Rev. G. Gilbert, Claxton, Norwich; G. Johnston, Farnham, Surrey; J. T. Sigston, Welburn, near Castle Howard, York.

COCHIN-CHINA (Brown and Partridge-feathered).—Highly Commended, J. Cattell, Moseley Wake Green, near Birmingham. *Chickens of 1858*.—Highly Commended, H. Churchill, Gloucester; Miss V. W. Musgrave, West Tower, Aughton, near Liverpool. Commended, Mrs. Burdon, 60, North End, Croydon; — Cartwright, Oswestry; Mrs. W. L. Christie, Glyndebourne, near Lewes, Sussex; J. K. Fowler, Prebendal Farm, Aylesbury.

COCHIN-CHINA (White).—Highly Commended, H. Churchill, Gloucester; J. K. Fowler, Prebendal Farm, Aylesbury. *Chickens of 1858*.—Highly Commended, J. Dodd, Minshull-Vernon, near Middlewick; Rev. J. E. Yonge, Eton, Windsor.

COCHIN-CHINA COCKS (Coloured and White).—Highly Commended, J. K. Bartrum, Bath; Mrs. E. Herbert, Powick, near Worcester; Miss V. W. Musgrave, West Tower, Aughton, near Liverpool; H. F. Wells, Aldboro' Hatch, Ilford, Essex. Commended, G. Johnson, Farnham, Surrey.

BRAMHA POOTRA.—Highly Commended, S. C. Baker, Pheasantry, Beau Street, Chelsea; G. Botham, Wexham Court, Slough. *Chickens of 1858*.—Highly Commended, G. Johnson, Farnham, Surrey. Commended, G. M. Lake, Chapel End, Walthamstow; R. Teebay, Fulwood, near Preston.

BRAMHA POOTRA COCKS.—Highly Commended, J. K. Bartrum, Bath; W. G. K. Breavington, Hounslow; J. F. Chater, The Nurseries, Haverhill. *GAME* (White and Piles).—Highly Commended, J. Monsey, Thorne Lane, Norwich. *Chickens of 1858*.—Highly Commended, Rev. G. S. Cruxys, Cruxys Mochard Court, Tiverton; S. Matthew, Chilton Hall, Stowmarket.

GAME (Black-breasted and other Reds).—Highly Commended, Sir Joseph Paxton, Rockhills, Sydenham; N. N. Dyer, Manor House, Bredon, near Tewkesbury; A. C. Swain, Radcliffe, near Buckingham. Commended, Hon. W. W. Vernon, Wolseley Hall, Rugeley, Staffordshire. *Chickens of 1858*.—Highly Commended, J. M. Baker, Dordon Hall, Atherstone; W. Cox, Brailsford Hall, Derby; W. Dawson, Selly Oak, near Birmingham; H. Horton, Sansom Walk, Worcester; N. M. de Rothschild, Gunnersbury Park, Acton; Mrs. H. Sewell, Upton-on-Severn; W. H. Swann, Farnsfield, Southwell; W. R. Walker, Marlesford, near Wickham Market; G. W. Moss, The Beach, Aigburth, near Liverpool. Commended, S. Field, Farnsfield, Southwell; Hon. W. W. Vernon, Wolseley Hall, Rugeley; W. W. Boulton, Beverley.

GAME (Blacks and Brassy-winged, except Greys).—*Chickens of 1858*.—Commended, W. Ballard, Woodcote Lodge, Leamington; R. G. Hawkins, Eyton Corn Mills, near Wellington, Salop; S. T. Smith, Lincoln View, Ironbridge.

GAME (Duckwings and other Greys and Blues).—Highly Commended, Hon. W. W. Vernon, Wolseley Hall, Rugeley; J. House, Anderson, Blandford; J. Monsey, Thorne Lane, Norwich. Commended, G. Lingard, Selly Grove, Bristol Road, Birmingham. *Chickens of 1858*.—Highly Commended, Hon. W. W. Vernon, Wolseley Hall, Rugeley; J. House, Anderson, Blandford. Commended, W. Ballard, Woodcote Lodge, Leamington; W. Chatting, jun., North Street, Wandsworth; T. W. Jones, Portland Cottage, Wellington, Salop.

GAME COCKS.—Highly Commended, N. N. Dyer, Bredon; E. Hanbury, Poole, Ware; H. Horton, Sansom Walk, Worcester; F. Munn, Temple, Langherne, Worcester; A. C. Swain, Radcliffe, near Buckingham. Commended, W. Ballard, Woodcote Lodge, Leamington; R. W. Fryer, Hinton Road, Hereford; G. Lingard, jun., Selly Grove, Birmingham; J. Monsey, Thorne Lane, Norwich; G. W. Moss, The Beach, Aigburth, Liverpool; J. R. Rodbard, Aldwick Court, Wrington, near Bristol.

HAMBURG (Gold-pencilled).—*Chickens of 1858*.—Commended, R. Oxley, Express Office, Windsor.

HAMBURG (Silver-pencilled).—*Chickens of 1858*.—Highly Commended, Rev. F. B. Pryor, Bennington Rectory, Stevenage; R. Oxley, Express Office, Windsor. Commended, F. Buckland, Wrasibury, near Staines.

HAMBURG COCKS (Gold or Silver-pencilled).—Highly Commended, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk. Commended, J. Bennett, North Nibley; C. W. Grenfell, Taplow Court, Maidenhead.

HAMBURG (Gold-spangled).—Highly Commended, Rev. A. J. Coleridge, Great Haseley, near Tettsworth. *Chickens of 1858*.—Highly Commended, J. B. Chunc, Coalbrookdale. Commended, G. Brook, East Parade, Hudbersfield; W. Cox, Brailsford Hall, Derby.

HAMBURG (Silver-spangled).—Highly Commended, J. Robinson, Vale

House, Garstang. Commended, G. Chadwin, Tollard Royal, Salisbury; J. Dixon, North Park, Bradford. *Chickens of 1858*.—Highly Commended, Lady Julia Cornwallis, Linton Park, Staplehurst; H. Beal, Wexham, Slough; J. Dixon, North Park, Bradford. Commended, W. Ludlam, North Holme Street, Bradford; J. Newick, Hinton St. George, near Ilminster.

HAMBURG COCKS (Gold or Silver-spangled).—Highly Commended, A. Herbert, Coventry. Commended, W. C. Worrall, Rice House, near Liverpool.

POLISH (Black with White Crests).—Highly Commended, Lieut.-Col. Clowes, Froxmer Court, Worcester; G. S. Fox, The Court, Wellington, Somerset; G. Ray, Ivy Cottage, Minstead, Lyndhurst, Hants. Commended, J. Dixon, North Park, near Bradford, Yorkshire.

POLISH (Gold).—Highly Commended, Mrs. W. L. Christie, Glyndebourne, Lewes, Sussex. Commended, Mrs. Pettat, Ashe Rectory, Basingstoke, Hampshire.

POLISH (Silver).—Highly Commended, J. F. Greenall, Grapenhall Hall, Warrington. Commended, Lieut.-Col. Clowes, Froxmer Court, Worcester; J. Dixon, North Park, near Bradford, Yorkshire; G. S. Fox, The Court, Wellington, Somerset; Mrs. Pettat, Ashe Rectory, Basingstoke, Hants.

POLISH COCKS.—Highly Commended, P. H. Jones, High Street, Fulham.

MALAY.—Highly Commended, C. Ballance, 5, Mount Terrace, Taunton, Somerset. Commended, C. Ballance; J. Leighton, 183, High Street, Cheltenham; J. Rumsey, 180, High Street, Shadwell. *Chickens of 1858*.—Highly Commended, N. Sykes, jun., 22, York Street, Globe Road, Mile End. Commended, C. Ballance; R. Burrows, 12, Richard Street, Limehouse Fields; W. Mansfield, jun., Dorchester; W. Rogers, Woodbridge.

ANY OTHER DISTINCT BREED.—Highly Commended, Hon. W. W. Vernon, Wolseley Hall, Rugeley (Guilderlands); Rev. T. L. Fellowes, Beighton Rectory, Acle (Japan Game); Rev. T. Langford, Wolverton, Kingsclere (White Frizzled, or Friesland); R. W. Fryer, Hinton Road, near Hereford (Buff Potions); T. Bridges, Bridge Cottage, Croydon (Black Cochinchina); H. Thompson, Market Street, Windsor (Black Hamburg); W. R. Lane, Bristol Road, Birmingham (Black Hamburg). Commended, C. Coles, Fareham (Andalusian); H. M. Hitchcock, Dunchurch, near Rugby (Indian Game Fowl).

BANTAMS (Gold-laced).—Highly Commended, T. H. D. Bayly, Ickwell House, near Biggleswade; M. Leno, jun., Cheverell's Cottage, Markyate Street, Herts. Commended, Rev. G. F. Hodson, North Petherton, near Bridgewater.

BANTAMS (Silver-laced).—Highly Commended, T. H. D. Bayly, Ickwell House, near Biggleswade; J. Bellycald, Hyson Green, Nottingham; G. Bradwell, Southwell; M. Leno, jun., Cheverell's Cottage, Markyate Street, Herts.

BANTAMS (White).—Highly Commended, Rev. G. S. Cruxys, Cruxys Mochard Court, Tiverton. Commended, S. Ridley, Clayton.

BANTAMS (Black).—Highly Commended, W. Barber, Globe Road, Mile End; J. Percivall, Birmingham; J. J. Walker, 45, Porchester Square; Rev. F. Watson, Woodbridge. Commended, J. J. Horton, Birmingham.

BANTAMS (Any other variety).—Highly Commended, J. Camm, Southwell; H. Churchill, Gloucester; W. S. Forrest, Greenhithe; J. Monsey, Norwich; I. Thornton, Hecknoldwicke; Hon. W. W. Vernon, Rugeley. Commended, J. Crossland, jun., Wakefield.

GEESK (Grey and Mottled).—Commended, S. Rigby, Welford.

DUCKS (White Aylesbury).—Highly Commended, J. Choyce, jun., Atherton. Commended, S. Burn, Whitchurch.

DUCKS (Rouen).—Highly Commended, W. Ballard, Leamington; J. K. Bartrum, Bath; G. Daft, Halloughton; J. K. Fowler, Aylesbury. Commended, W. G. K. Breavington, Hounslow.

DUCKS (Black).—Highly Commended, H. Churchill, Gloucester; W. Cox, Derby.

DUCKS (Any other variety).—Highly Commended, A. D. Bartlett, Lower Norwood (Mandarin Ducks); Lady Julia Cornwallis, Linton Park, Staplehurst; Mrs. Pettat, Ashe Rectory, Basingstoke (Domesticated Wild Ducks).

TURKEYS.—Highly Commended, Mrs. W. J. Lloyd, Langlebury, Watford. Poulets.—Highly Commended, Miss L. Crawshaw, Caversham Park, Reading; Mrs. W. J. Lloyd, Watford. Commended, Mrs. H. Fookes, Whitechurch, Blandford; Hon. Mrs. A. Way, Wonham Manor, Reigate.

The Judges were Mr. Hewitt, Birmingham, and Mr. Baily, London.

KIRKCALDY POULTRY AND FANCY BIRD SHOW.

THIS took place, in the Public Buildings, on the 8th inst. So great was the influx of coops, cages, and visitors, that the last, of whom there was a large muster, found themselves cooped up much like the feathered pets. The Exhibition appeared to have special attraction for the fair sex. Much of the beauty and fashion of the district graced the hall during the day, and, judging from the way in which they lingered over the feathered favourites, we should say that writers on "woman's mission" ought henceforth to include chicken-feeding in their catalogue of duties. The collection was, indeed, worthy of their approving smiles, for, in some of the classes, better specimens were never before shown by any provincial Society. The *Dorkings* were particularly fine, impurity in breed being scarcely observable, even in the non-prize birds. Altogether, the Exhibition was a decided success. It could have been made much more extensive if the Committee had had space enough at their disposal. Several fanciers at a distance had to be reluctantly refused, simply because there was no room for more coops—a fresh argument, by the bye, for a new Corn Exchange. Mr. Robertson's taste was admirably displayed in the fitting-up department, the whole of the coops having been fitted up by and under his superintendence; and the other arrangements were every

way praiseworthy. Were we to "hazard an observation," we would press upon the Society the propriety of utilising their endeavours as much as possible, by which we mean that, in awarding prizes, they should not look merely to bright glossy-feathered chuckies, but have an eye as far as possible to the quantity of eggs, which, after all, is the most material test of a good hen. Unfortunately, at the close, a five-pound prize Canary bird, belonging to Mr. Robertson, which had carried off head honours at Glasgow, Perth, and other places, and which had just been preferred by the Judges, dropped down dead on an instrumental band beginning to play in the street. Was it envy of their superior strains, or the shock of their discordant notes, that stunned the little songster, and produced the fell catastrophe? Mr. Brown, Perth, and Mr. Johnstone, Broughty Ferry, who acted as Judges, and discharged the duties with great good taste and skill, made the following awards:—

SPANISH (bred by members in 1858).—First and Second, J. Laing, Dysart. Third, A. Lockhart, Kirkcaldy.

DORKING (bred by members in 1858).—First and Third, J. Stocks, West Bridge. Second, R. Lockhart, Kirkcaldy. Highly Commended, D. Laing, Kirkcaldy; Mrs. Oswald, Dunnikier; Rev. J. B. Haxton, Pathhead. (This was a highly meritorious class.)

COCHIN-CHINA (bred by members in 1858).—First and Second, Lord Loughborough, Dysart House.

HAMBURGH (bred by members in 1858).—First, C. A. Lockhart, Kirkcaldy. Second, P. Darling, Skedboway. Third, W. Bonthron, jun., Kirkcaldy.

GAME (bred by members in 1858).—First, D. Paton, Pathhead. Second, J. Ness, Pathhead. Third, T. Jackson, Kirkcaldy.

DUCKS, Aylesbury (bred by members in 1858).—First, J. Young, Burntisland. Second, Colonel Ferguson, M.P., Raith.

SPANISH, Old (competition open to Scotland).—First, J. Redpath, Edinburgh. Second, J. Laing, Dysart. Third, J. Brown, Kinross. Highly Commended, A. Lockhart, Kirkcaldy.

DORKING (any age, open to Scotland).—First, W. Taylor, Cullalo Lodge, Abdour. Second and Third, R. Lockhart. Highly Commended, J. L. Gow, Raith; T. Y. Craig, Pathhead; Rev. J. B. Haxton. (This class was considered the best in the Exhibition.)

COCHIN-CHINA (any age, open to Scotland).—First and Second, Lord Loughborough, Dysart House.

HAMBURGH (any age, open to Scotland).—First, C. A. Lockhart, Kirkcaldy. Second, P. Darling, Skedboway.

GAME (any age, open to Scotland).—First, J. Cluny, Kirkcaldy. Second, D. Anderson, Kirkcaldy. Third, T. Jackson, Kirkcaldy. Highly Commended, D. Milne, and J. Hay.

BANTAMS.—Prize, J. Young, Burntisland.

DUCKS, Aylesbury (any age).—First, J. Stocks, West Bridge. Second, J. Jamieson, Kirkcaldy. Third, Colonel Ferguson, M.P., Raith.

DUCKS (any other breed, any age).—First, J. Jamieson, Kirkcaldy. Second, J. Young, Burntisland.

TURKEYS (any age).—First and Second, J. Jamieson, Kirkcaldy. Third, J. Young, Burntisland. Commended, Colonel Ferguson, M.P., Raith.

CANARIES.

YELLOW COCKS.—First and Second, J. Robertson, Links. Third, W. Bonthron, jun., Kirkcaldy.

BUFF COCKS.—All the prizes gained by J. Robertson, Links.

YELLOW HENS.—First and Third, J. Robertson. Second, D. Laing.

BUFF HENS.—All the prizes gained by J. Robertson.

YELLOW BELGIUM COCKS.—First, J. Robertson. Second, J. Herdsman.

BUFF BELGIUM COCKS.—First, D. Laing. Second, J. Herdsman. Third, J. Beveridge.

YELLOW BELGIUM HENS.—First, J. Herdsman. Second, D. Paton.

BUFF BELGIUM HENS.—First, W. Bonthron, jun. Second, J. Robertson. Third, P. Wilson.

YELLOW PIEBALD COCKS.—First and Third, W. Bonthron, jun. Second, A. Young.

YELLOW PIEBALD HENS.—First, J. Henderson. Second, A. Young.

BUFF PIEBALD HENS.—First, J. Robertson. Second, J. Herdsman. Third, A. Young.

YELLOW GOLDFINCH MULES.—First, J. Robertson. Second, J. Ness. Third, D. Paton.—*Fifehire Advertiser*, January 8, 1859.

THE PHILOPERISTERON MEETING.

The Meeting of this Society, at the Freemason's Hall, was held on Tuesday, the 11th inst.; and, from the time the doors were open until the repacking of the birds commenced, the Hall was densely crowded. We believe that upwards of 700 tickets were issued, and we know that many more would have been received with avidity by the country fanciers assembled in London for the Crystal Palace Show.

For the arrangements, the company, and the beauty of the birds, this Meeting must stand alone. Here, at least, there is no disappointed exhibitor, for all take the same standing, and that is a very high one.

On entering the Hall, the general appearance of it could not fail to strike the visitor; and we fancied how different it must appear under this aspect to what it does in general.

The centre of attraction seemed to be the fine collection of *Powters*, belonging to Mr. Bult; and these splendid birds certainly deserved all the admiration bestowed on them. They put us in mind of the Swiss cows at the Parisian Agricultural Exhibition of 1856, where each had her bouquet, looking-glass, bell, and sometimes an image of the Virgin, suspended over her manger; for in front of their pens were suspended rosettes of divers-coloured ribbons, silver medals, &c. The centre pens were occupied by three milk-white birds of great beauty, and the condition in which they were shown says much for the care taken of them by their owner. The same gentleman also exhibited a cage of very good *Jacobines*.

Mr. Hayne, of Croydon, perhaps the most successful breeder of *Carrier Pigeons* of the day, fully sustained the reputation his birds have so generally won for him. They were all that could be desired. Mr. Oliver, and Mr. Esquillant, both exhibited some very handsome specimens of this celebrated Pigeon.

Mr. Wickings' cage of silver *Owls* could not fail to attract great attention, and we think such a collection was never before exhibited. The same gentleman showed some exquisite *Toys*, and in one cage a pair of *Almond Baldheads*.

The *Turbits* were very good; the yellow *Magpies* also. Mr. Jones Percival pleased every one with his pen of *Almond Tumblers* and *Beards*. As for the latter, they were the admiration of all, and the *Almonds*, especially one cock bird, seemed as if they had been subjected to a course of treatment under the phrenologist, in Captain Marryat's novel, where by his machine he brought all heads to the required shape.

The *Fantails* of Mr. Harrison Weir's collection, are, probably, hardly to be equalled, the blue ones especially. The *Jacobines* in the same cage seemed perfection, both for colour and frills.

Where all the birds exhibited are so good, it seems difficult to omit notice of any; but some we pass over, for want of space only. In conclusion, we would heartily wish all success to the Philoperisteron Society, the members of which must feel gratified, and who really deserve the hearty thanks of the many who on Tuesday had this great and gratuitous treat. We believe the Society to be in a very flourishing state. The fancy for Pigeons is daily extending, and it is by such Meetings as this that it is fostered and increased. Many men who cannot keep their racers or greyhounds, can fly their Pigeons. They are not, perhaps, such costly ones as those we have noticed. Those who have not even scope for the larger varieties of poultry, may find space for a pigeon-loft; and, descending to the more practical and commonplace view of the subject, while it can pay the French to send hundreds of dozens of young Pigeons to London per week, and get a good profit from them,—surely we ought to pay more attention to these fecund and useful birds ourselves. In France, Germany, and the greater part of the Continent, they are kept in great numbers. In the former country, so important are they considered, that the new agricultural code, lately promulgated, has many enactments relating solely to Pigeons.

It may be said, that the Society about which we have been writing will do nothing for the commoner and staple varieties. The same thing was said of the cattle and poultry Shows, and now the improvement, both in beasts and fowls, throughout the kingdom, is plain to every one.

OUR LETTER BOX.

EGG HARVEST (W. S.).—It is a very large produce to have obtained from twelve hens during ten months, and only nine of those hens for the remaining two months—1,372 eggs.

CREWE POULTRY SHOW (F. Watkins).—We have repeatedly pointed out your only remedy. Losing your fowls was a great grievance; but you could recover their value from the carrier, if he conveyed them in his regular business as a carrier.

BRAHMA POOTRAS.—"J. H.," who wrote relative to these birds in our Number for January 4th, will oblige us by again sending his address. We have a letter sent to us for him.

GAME COCK WITHOUT SICKLE FEATHERS (J. M. K.).—I have a Game cock, which it is my intention to show next month; but, through an accident, he has lost his two tail feathers. Will this be to him a complete disqualification for getting a prize, supposing him to be the best bird shown? Your answer will much oblige.

[Something depends on the colour of your bird. It would be unimportant in a Pile, as the colour varies, and may be brown, black, white, or mottled. It is not a disqualification in a Black-breasted Red, but it is a disadvantage; as, if it were unnoticed, it would enable any exhibitor who had a good bird, with a white feather in his tail, to pull it out with impunity. A white feather in the tail of a dark Game cock is a disqualification.]

WEEKLY CALENDAR.

Day of M'nth	Day of Week	JANUARY 25-31, 1859.	WEATHER NEAR LONDON IN 1858.					Sun Rises.	Sun Sets.	Moon R.ands.	Moon's Age.	Clock afterSun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.							
25	T	CONV. ST. PAUL. PRS. ROYAL M.	30.416-30.010	44-20	S.	—	51 af 7	34 af 4	22	0	©	12 34	25
26	W	Narcissus floribundus. [1858.	30.190-30.089	35-24	S.E.	—	50 7	36 4	41	1	22	12 47	26
27	TH	Scilla amœna.	30.105-30.064	46-19	S.E.	—	49 7	37 4	58	2	23	13 0	27
28	F	Scilla bifolia.	30.215-30.164	49-23	S.	—	47 7	39 4	11	4	24	13 12	28
29	S	Begonia manicata.	30.251-30.071	54-44	S.W.	.02	46 7	41 4	17	5	25	13 23	29
30	SUN	4 SUN. AF. EPIPH. KING CHAS. I.	30.001-29.800	56-38	S.W.	.20	45 7	43 4	11	6	26	13 33	30
31	M	Erica coccinea [MART. 1649.	29.921-29.754	46-26	W.	—	43 7	44 4	51	6	27	13 42	31

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 44.0° and 31.4°, respectively. The greatest heat, 56°, occurred on the 28th, in 1846; and the lowest cold, 14°, on the 29th, in 1857. During the period 194 days were fine, and on 102 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

THE long continuance of such fine weather as we have had, would almost beguile us into the idea of advising work to be done that is generally recommended in March and April, if we had not some lurking fears that there are breakers ahead, and, therefore, that it would be imprudent to unfurl our sails, and to launch at once into spring work. We would advise a thorough drainage of the ground where it is naturally heavy, low, or wet, to prevent the lodgment of heavy falls of rain, or snow. Good drainage is indispensable for the successful treatment of fruit trees and vegetables. Make the drains at least three feet deep: the distance apart is regulated by local circumstances; but twenty feet apart is about the general average. Use tiles and soles, with six inches of brickbats, stones, &c., over them, and a little long straw, or litter, over the stones, &c., to prevent the soil from mixing with them, and also to make the drainage more perfect.

ASPARAGUS.—If a plantation is intended to give a supply for forcing every year, the ground should now be well manured, and deeply trenched, in preparation for planting in March.

CAPSICUM seed, of the large sort, should be sown in pans, or pots, and placed in heat; as soon as the seedling plants are an inch or two high, to be shifted, singly, into small pots, replaced in heat, and afterwards shifted into larger pots, as they may require, until the end of May, when they may be planted out on a south border.

CELERY.—Sow a little in a box, for soups, in the early part of the summer. For a crop this early sowing is not to be depended upon, as the plants soon run to seed.

CUCUMBERS.—Continue to stir the dung, in the fruiting-bed, every second or third day, until the plants are ready to be turned out. Place some strips of turf on the centre of each light, with the grass side downwards. After which, put a barrow-load of soil, composed of three-parts sandy leaf mould and one part loam, under each light, on the turf. Let it remain for a few days, until the heat is moderate, about 70° or 75°, when the plants may be turned out. The lights should be well washed on the inside, to admit as much light as possible.

LETTUCE.—Sow some *Paris Cos*, in boxes, in a gentle heat. Give all the air possible, in favourable weather, to those in frames.

PARSNIPS.—Trench the ground, to be in readiness for sowing next month.

PEAS and BEANS.—Sow a succession of each where the soil is in a favourable state.

RHUBARB, SEA-KALE, &c.—Forward fresh supplies as wanted.

SPINACH.—Sow the round sort between the rows of Peas, for the chance of an early crop.

TOMATOES.—Sow some seed immediately, to have strong plants ready to turn out when all danger of frost will be over.

FRUIT GARDEN.

FILBERTS.—The practice in Kent, to form handsome No. 539. VOL. XXI.

dwarf trees, is, to cut down the young tree within one foot of the ground, which will make them break strong. About six or seven shoots, at regular distances, are retained, and the others are removed. A small hoop is placed inside the shoots of each tree, and one tie given, to keep them in their proper places. The next season they are stopped at the height of six feet, and all the shoots cut away that are above six inches in length: the rest are left for spurs.

VINES (Out-door).—Prune, as there are many old trees covering a large space with weak shoots. It is advisable to thin out the weakest portion of the branches, or shoots, leaving only the strongest, and those at least eighteen inches apart, and not more than three eyes in length. The wall should be brushed clean, the loose bark removed from the old stems, and the branches and shoots firmly nailed, without being too tightly girded by shreds.

FLOWER GARDEN.

DAHLIAS.—Look over the roots, and clean them of diseased and decaying parts; and if a stock is required, they may be started in a gentle heat, to produce offsets, or cuttings.

ROSES.—Prune the hardy sorts, with the exception of the lately planted, which should receive that attention later in the season.

SHRUBS (Mixed).—When they are getting overcrowded, it is better to take them up and replant them, and to prune the luxuriantly-growing ones. Layering may now be successfully performed, when the plants have become bare and unsightly at the bottom. Ivy, or Periwinkle, plants are useful for covering bare and exposed places, under large trees, or shrubs, with a bright green carpet of foliage.

PITS and FRAMES.—Give plenty of air to them in fine weather. Look over the plants frequently, and pick off all dead and decaying leaves. Dung and leaves should be prepared, for making a small hotbed for cuttings and seeds. It will frequently require to be turned over and watered, if dry, until it becomes well sweetened. All dirty flower-pots, seed, and cutting-pans, should be washed clean, in readiness for use.

WILLIAM KEANE.

WINTER NOSEGAYS AND BULBS IN ROOMS.

THERE is no proof like the proof of the pudding, whether of a plan, a drawing, or a model of something that is in the world of matter. However odd, or clumsy, such proof may be, it has more real value in it than the best suggestion of the same from the mere world of thought—that is, in a practical sense. A proof to the point is just now under my own eye. I have a model for a Christmas nosegay in my "keeping room," and I have been waiting all this time, to see how the new idea would work in the world of matter among my crockery. Nothing in this world ever did better, or was more cheap, or easier to do, or better in its way when done; and having proved it to be all that, and that it is a source of great satisfaction to others who enjoy it with me, I am tempted to write one

of those "broomstick" articles about it, which are so purely, and so usefully domestic, that they come home to the fireside of every one of us, no matter in what station of life we may be in. Or, if there is one being in the kingdom who is indifferent about flowers, at this season of the year,—I mean the season of Christmas,—I should like this article to make a lasting impression upon his ideas of comfort and merry-making. I say *his*, because I happen to know that no lady could be found to whom flowers are indifferent, in some shape or other.

Cut flowers, without leaves, or sprigs of shoots, soon get very tame to a good eye, and that is the reason why so many dislike the Guernsey Lily (*Nerine Sarniensis*), and other bulbs which throw up a naked flower-stalk—that is, which bloom before the leaves come, as the autumnal Crocuses do. But this is the very reason why others are so fond of such flowering bulbs and plants; and I am one of the latter. My reason for this fondness of naked flowers is, that I can believe they were given to us on purpose to raise our ideas of the works of nature, and to warm our affections to such a point, that we could not look upon a natural flower, which was naked, without wishing for an opportunity, and the means of clothing it, in leaves, or shoots, or sprigs, or whatever was thought to be the nearest to Nature's way of doing it. The wished-for opportunity occurs every time we come into possession of a new *nudiflorum*.

The last best *nudiflorum* that we received is to be the first special *nudiflorum* that I shall mention, and recommend to day, for clothing, during the Christmas sympathies. It is the one on which I bestowed my own diligence, and the one which rewarded me the most of all the real *nudiflorums*, or naked flowers. *Jasminum nudiflorum* is the plant. It covers round the front door, and on a north-west aspect blooms, with me, from the end of November till early in March, more or less, according to the severity or mildness of the winter. The frost does not seem to have any very great power on the flowers, unless the sun comes to help the nakedness, which it very seldom does on that aspect, while *nudiflorum* is in its prime.

In summer, when the plant is in leaf, it is just as useful as now, for it clothes, in its turn, the flower-boxes in the windows, and you can see nothing but green all round, and flowers on the top. No insects, nor other ailment, hinders it from being in the most flourishing, green, and shining condition at that season, on the said aspect; and with a liberal supply of water, it is just as good full in, or on, the south aspect; therefore, there is no doubt but with a half liberal supply of water on an east wall, or on a west aspect, it would do equally well. So that it will do all round a house equally well. But, to come in for Christmas use, I think it ought to be at the back of the house, if the front door faces the sun, in this latitude. It is very cheap, very clean, very hardy, very useful, and will grow up or down with equal freedom and vigour, and may be trained sideways to cover anything. Moreover, it ought to be cut down as low as possible, at the end of April, after planting, and pretty close for the next two seasons, at the same time. After that, it requires no spring or summer pruning, on my system, as long as you have space for it to run over. All the pruning I give my best plant, is from the first of December to about the middle of February; and it is partly pruned during every week of that period, "for the sake of somebody," for cut flowers. At last, the whole plant is thinned pretty freely; but no young shoot that is left is touched with the knife, which is the grand secret of growing it to perfection. What you cut, cut clean out, and what you leave, leave untouched. That is the golden rule for pruning Gooseberries, *nudiflorum*, and a few other plants, and some hybrid China Roses.

Now, the portion of our people who despise the Guernsey Lily, and the "likes" of it, would gnash their teeth at a handful of shoots of this *nudiflorum* being

brought in to them. But I shall turn them and their tune with this article. Do as I do, for I do as I say, and I can truly say, that *Jasminum nudiflorum* is the best plant in the catalogue, to teach people to like naked flowers, to dress and clothe them, and then to admire them as much as flowers clothed by Nature herself. After a good many ways, this is the best way to clothe a naked-flowering Jasmine.

First of all, get a vessel to hold it—anything will do, from a punch-bowl to a golden goblet, without holes at the bottom or at the side, and no harm in the matter if there be holes. Mine, which is not my own, is a pale green-coloured glass, in the shape of a wide-mouthed funnel, with a long leg, as for filling a cask, but without holes at the bottom; the long leg of the funnel goes down into a socket, in a frosted silver stand, which is over a foot in height; and the top of the funnel-like glass stands just fifteen inches high above the dinner-table. The flowers stand above that height, and spread over or round a circle, whose circumference is over four feet—sometimes more, sometimes less, according as this vase is filled. Anything, however, will do. The vase, or vessel, is then filled to within one inch of the top with very soft earth. I used the cocoa-nut refuse, the best of all moulds. On the top of the mould, I placed as much of the Golden Stonecrop as made a thick, close covering, with some of the same hanging down a few inches from the edges of the vase, in a regular fringe; and I gave the whole as much water as the mould would hold, without floating on the surface. The more common form of this plant—the green Stonecrop, *Sedum acre*—would do just as well. This is easily to be had anywhere, and to plant it is one of the easiest things in the world: if you press the root side of it on the mould, that is all it requires: it takes to the soil at once, and in a warm room the little ends stand upright next day, like the ends of my fringe, and nothing could look more clean, more fresh, or more tidy. The next turn was to plant so many shoots of *Jasminum nudiflorum*, in full bloom, and from nine to fifteen inches long, into the vase, taking care not to bruise or displace any of the Stonecrop. The mode of placing, or planting, the shoots was with a small, long-pointed stick, as a dibber. Eight of the shoots—all from nine to twelve inches long—were put in very firm in a circle, one inch within the rim of the vase, and placed so as to spread out three times the size of the mouth of the vase, at one regular distance, shoot from shoot, all round. A little within this circle, I planted another of five shoots, in the same way; and in the centre of the vase I put in three more shoots—the three longest in a small triangle, and I was much pleased with the effect: it was neat, regular, and very rich in colour. The yellow of my Golden Stonecrop was changed to a pale primrose, from the richer yellow of the *nudiflorum*. Something more seemed wanting now, besides the ground surface in green and primrose, to set off so much bloom—to clothe the vase, in fact; and I was somewhat puzzled how best to effect this, as I wanted the nosegay to be first-rate. Nothing seems so vulgar, to my eye, as putting heaps of flowers together without taste, or some kind of design.

As far as I went I had nothing to complain of; but the whole put together—the frosted silver stand, the pale green glass vase, the Stonecrop, and the *nudiflorum*—made too much of a good thing of it. I now read some chapters of Chevreul on colours, and I could see plainly enough what was wanting; yet I could not hit off the remedy to my own satisfaction, and Christmas was nigh at hand. But the remedy came by itself, as it were. A countryman, with a cartload of stolen Holly, on his way to Covent Garden market, called at the door to offer some. He declared he "came by them as honest as anybody," that the churchwardens of such a parish were amongst his customers, and that he could sell them cheap. The time of year rendered Holly just the thing for my fancy, but I fear my fix caused me to buy stolen

property; for I bought some, and put some of the best pick among my *nudiflorum*. Now I had too many, and how they were too high, or too low; but at last the exact number of shoots, leaves, and red berries, seemed to be just the very thing—the best hit I ever made, and I shall never make such another. My Christmas nosegay for the dinner-table, and for the very centre of it, is the best thing of the kind now in existence. All the plants in the catalogue, and all the cut flowers one could think of, would not, and could not, in the same space, give such a degree of richness, or a better combination, or a cheaper article, or a more seasonable nosegay; and I shall keep it as it is, by refreshings, as long as the Hollies are left up in the church, but no longer; for I hold it to be one of the secrets of success, in any one thing, to keep strictly within the fashion.

This brilliant centrepiece to the dinner-table at Christmas would be altogether out of place on Good Friday, or Easter Sunday, and I must think of some other change to follow.

One other thing is to be thought of, however. To dine eighteen requires a longer room and a bigger table than to dine six or twelve, and all things about dining and the dining-room ought to bear a strict proportion to the number who sit down to dinner; and the rule holds good for the flowers,—the size and number of the plants, or the disposition of the cut flowers,—if they must be used like mine. The size and style of that which I have just told of, is best fitted for a dinner of twelve persons; and it would do for a less number, down to six, but not higher. A larger vase and a higher and wider centrepiece, in such an arrangement of cut flowers, would be necessary for a larger party. On the other hand, the flowers that would suit a party of twelve at dinner, would not be out of place at a supper-party of forty young people fresh from the ball-room. It is a poor set-out to have no flowers for such parties; but it is extremely vulgar not to have them as if they knew all about them. Almost every head-gardener in the kingdom, above a certain notch, is obliged to study these things as carefully as he studies Orchids or prize plants. Many families put as much stress on furnishing the rooms with pot plants, and cut flowers in various ways, as they do on their forcing-houses and flower gardens; and I have seen and heard so much of it, that I should tremble for my fame if I were to let an inch of it slip from my pen without full consideration. You may, therefore, depend upon this style being as good, as useful, and as fashionable, as any other you have ever read or heard of.

My reason for saying so, is this. In the first place, no gardener out of five hundred ever writes about what he practices, now-a-days; and almost every one of them are shy at writing about household-work, or any kind of work out of the garden; and no class of men are more apt to make remarks on things they see out of place, or out of the fashion, among their betters, or their own equals; although they must be well aware that all men, or all women, cannot possibly know all things, that are considered, in our day, to be essential to our standing in society. The gardeners must see and hear everything of this stamp which passes, and must be had, amongst the highest in the land; and what one gardener has no opportunity of seeing, or hearing, another gardener, who is in the midst of it, will tell him, so that our head men are never at a loss about these things. But they foolishly believe, that to write about the things themselves would be considered as too trifling by the rest of the world, and that they would only be laughed at for such tales and ways of instruction. Then, the rising generation of gardeners are but too apt to follow the same path. But it strikes me that, by my own example of breaking through all these rules, and ridiculous notions, and by giving a "broomstick" article now and then, when other matters are not too pressing, I may be the means of drawing the

young ideas into a more useful track, both for themselves and for those who employ them, or for whom they may write in after-life.

Just hear my last story of the old '58. The very last day but one of the last year, I learned the best hit I ever saw for keeping Hyacinths and all forced bulbs in living-rooms. I never heard of it, or saw it before; and, of course, if I were a young man I would not confess so much for all the bulbs in the country. From the moment these bulbs leave the forcing-house, till the bloom is over, even if they are in a cold show-house, they do far better if they stand in water—a saucer under the pot, with only as much water as will keep the bottom of the pot wet. I adopt that plan, also, at my own house at home.

D. BEATON.

NOTES ON THE HABITS OF SOME OF OUR BEST TABLE APPLES.

(Continued from page 226.)

I HERE continue this subject, commenced as above:—

OLD NONPAREIL.—This has long been a great favourite in this country, and most deservedly so: there are few that can excel it at this day, when well grown and in perfection. It is, however, unfortunately given to canker: but, like the *Margil*, it is not well to seek to extirpate every appearance of this disease by pruning, as such will never totally eradicate it; and branches of that character, if not too far diseased, will continue to yield very good fruit, if the vigour of the tree be encouraged.

This *Nonpareil* loves a generous soil; but if loam is used, it should not be so stiff and cold in texture, as for some of the coarser-habited kinds of Apples. It should, moreover, be planted on platforms, the soil not more than eighteen inches in depth. A little old manurial matter may be mixed with the soil, and biennial surface-dressings of rich manurial composts will be found of peculiar benefit in inducing surface roots, which will much promote the ripening of the wood. Shortening of the shoots should be regularly practised, especially in northern parts, as the points are apt to be immature.

BRADDICK'S NONPAREIL.—This is an excellent variety, and should be in most gardens. It is a good bearer, fine-looking on the table, and a really good winter and spring fruit. It is also a compact-growing tree, requiring a very moderate amount of room, and, therefore, particularly adapted to small gardens. The soil should be very generous—good, sound loam and a liberal amount of manure. As for pruning, it requires very little assistance, not being disposed to produce much spray. My trees are on the *Paradise* stock, and they bear abundantly very fine Apples indeed. On the free stock they will, no doubt, produce more wood.

Ross' NONPAREIL.—What a pity that this Apple is not better known—it is so peculiar in its flavour, whilst its texture is undeniable. It has proved the soundest Apple I have ever grown. The flavour is of a rich spicy character, after the manner of *Franklin's Golden Pippin*. There is no Apple with which I am acquainted which keeps so sure in the fruit room: it is most rare to meet with one blemished in any way. It is a sure bearer, and handsome in appearance, and of the most healthy constitution imaginable. It requires a rather liberal soil, and, in pruning, most of the interior spray should be removed annually.

KERRY PIPPIN.—No garden whatever is complete without this most valuable autumn Apple. When in high perfection, few can excel it, the flavour, in my opinion, being quite of the old *Golden Pippin* cast. A safer bearer does not exist, and it is of the most consistent and manageable growth—never rambling or irregular. This kind requires a strong loam, well enriched; and as to pruning, a very moderate amount indeed.

RED JOANETTING.—This best of early Apples loves a

sound soil, but not too rich. A moderate amount of pruning will suffice.

COURT-PENDU PLAT.—Invaluable, and one of the best of dessert Apples. This kind deserves every attention in the way of generous soil and careful pruning.

PITMASTON RUSSET NONPAREIL.—We have no greater bearer than this. I have a few trees, of at least twenty years standing, and I am not aware that they ever missed setting. Through this circumstance, the trees attain an aged appearance in the wood somewhat prematurely, indicating the propriety of a rich loamy soil, for there is no danger of its running too much to wood. Little pruning is required.

STURMER PIPPIN.—This comparatively new and late table fruit is a great acquisition to the late spring dessert, and everybody plants it. I have found that, when not full sized, they are apt to be somewhat depreciated as to texture. I am of opinion, therefore, that this kind will bear a liberal amount of manure.

PEARSON'S PLATE.—This is a great favourite of mine, as being of good flavour and texture, a capital bearer, a sound Apple in the fruit room, and a very neat dishing fruit. The soil should be very good, as it grows slenderly, and has much work to perform.

DUMELOW'S SEEDLING.—There is much error as to this Apple, in some parts of the country. Our readers know, that, as the catalogues have it, it is identical with *Wellington* and *Normanton Wonder*. I have the real *Dumelow*, as I think, and it is a very valuable fruit indeed. I have also those called *Wellington* and *Normanton*, from different nurseries. The two latter, with me, are alike, but very unlike *Dumelow*. The latter, with me, is like a bouncing *Hawthornden* in appearance, but keeps like a stone until near March, and lasts until May. It is a famous stewing Apple, pulp white and firm, and lively enough for goose sauce. Those called *Wellington* and *Dumelow* are great bearers, but inferior. That called *Wellington* is, I am informed, a famous market-gardener's Apple in Lancashire.

I should not have included the last kitchen fruit in my list, but for the sake of the opportunity of offering my experience concerning it.

I think I have now pointed to the chief of those, as far as my experience extends, which require any special remarks, and must offer a few observations in conclusion. I beg it to be observed, that my object was not to swell the list, but rather to contract it within the limits of well-known fruits of proved utility. I hope that amateurs and small gardeners will not be deterred from planting any of the kinds here named because they cannot comply with the conditions suggested. We all know that in various localities the soil is so well adapted for fruits in general that little preparation is needed, and that the ordinary kitchen-garden soil, in some parts, will suit them pretty well. My object is rather to point to a degree of shyness, in some kinds, which deserves a little attention.

It is astonishing how unsatisfactory certain new fruits have proved which were praised in such an extravagant way. For instance, there is the *Gravenstein* Apple. I planted a young tree twenty years since. It stood twelve years, at least, without bearing an Apple, and I then cut it down. *Ashmead's Kernel* was to prove indispensable : I have two trees of some seven years planting, which have not produced a fruit. The once celebrated *Hacon's Incomparable* Pear, too, is here the worst of bearers, and mealy as an old Turnip.

We had, therefore, better adhere to those good old kinds which stand well by us, and try to do justice to their culture. I have a huge standard *Glout Morceau* Pear—a tree planted for experiment twenty-four years since. It is on the Quince, the soil being prepared to suit the stock rather than the kind. This tree bears annually about a bushel of Pears, and of excellent quality. So very superior have they been this season, that my very worthy employer, who has great discrimination, took them for

the *Winter Nelis*, which is very excellent here. But they have been superior to the *Nelis*, and that from a big tree, standing in a situation which would not be considered too good for a *Swan's Egg* Pear.

R. ERRINGTON.

SHORT NOTES ON PLANTS, IN ANSWER TO SEVERAL CORRESPONDENTS.

GONOCALYX PULCHRA.—“ Potted in heath soil, leaf mould, turf, and sand, in April, it has grown freely. It is full of young growth, and looks well, but I want to see the flowers. It is grown in the greenhouse, at a temperature of from 40° to 45°.”

We should be inclined to give this plant 10° more heat, and to keep it rather dry in the winter months. This would make the stems firm, and give a stand point to the small, thick, rose-coloured leaves, among which the bright red flowers might then be expected to make their appearance. The leaf mould, in the case of a young plant, should be in small proportion, as it is apt to encourage growth, instead of predisposing to ripening growth.

GORDONIA JAVANICA.—This, when treated as above, is more likely to thrive well. But we are not sufficiently acquainted with it, to speak definitely as to its culture.

GONGORA ATRO-PURPUREA.—“ In a basket, six inches across and four inches deep. It has been kept nearly dry since last October, and in a heat from 55° to 65°. When will it want water?”

As soon as you perceive the pseudo-bulbs at the base swelling nicely. Do not allow the roots to get too dry in such a temperature—60° would be high enough in dark weather in winter. To hasten the swelling of the bulbs, if that is deemed necessary, frequently sponge the leaves, and the parts at their base, with warm water, without much wetting the soil. This will also tend to keep the plant healthy and clean. When the bulbs are swelling, the best mode of watering will be to place the basket for half an hour in water, at about 80°, and then to allow the superfluous moisture to drain away. It is best, however, to moisten a little gradually at first.

APHELANDRA CRISTATA and LEOPOLDII.—“ Not doing well. They are kept in a heat of from 55° to 70°. They often get covered with fly, though not one is seen on other plants.”

These plants are perfect nectar and ambrosia to the whole race of green-fly. If such an insect is in the house, it will be sure to fasten first on an *Aphelandra*. The beautifully marked *Leopoldii* likes shade from bright sunshine, and bottom heat when growing. Equal parts of fibry peat and fibry loam, and a third part of silver sand, bits of charcoal, and dried nodules of leaf mould, or old cowdung, grow such plants in perfection. I suspect that the bad appearance of your plants may be something owing to their treatment. The whole of this and allied genera bloom most freely by regular changes of a growing, a ripening, and a resting process. Keeping these matters in view, the plants now under consideration bloom most naturally, with us, in autumn and the first winter months, because the sun then helps us to grow and ripen the wood. We can rest in winter, by a low temperature and comparative dryness; but we cannot ripen the wood, as in the dry season and cloudless sun of a tropical climate. We presume your plants have not flowered; and, if the heat in the late dull weather was nearer 70° than 55°, we fear you will not have much reason for hoping that the plants will bloom in spring. Their blooming at the end of summer, or autumn, will be quite as much dependent on last autumn's treatment, as upon any you can now give them. You are aware, of course, that the flowers are produced on the points of the shoots. As you may have a chance of blooming them early this spring, and as there is yet time enough to try, without interfering with the future well-being of these plants, I will keep both matters

in view in the proposed line of treatment. Smoke and wash the plants so as to have them thoroughly clean. In the course of a week, reduce the heat to 50°, or even 48°. Give the plants all the sunlight possible. Give just enough of water to keep the leaves from flagging. Continue this treatment for fully six weeks. Then increase the temperature gradually to 70°, giving water in proportion, using it at about 80°, and giving a little bottom heat to the pots, if convenient. In a fortnight or three weeks, if the flowers are to come, the flower-buds will have made their appearance. If so, continue the moisture, and even increase the heat, until the flowers begin to show. Then gradually bring down the temperature to 60°, with more air. When done flowering, rest the plants for a fortnight or three weeks, by giving little water, that the shoots may be well hardened; and then treat as mentioned below, in the case of plants that have not shown flower.

In their case, the young shoots at the point will elongate, instead of showing the flower-bud. When that point is growing freely, all hope of bloom for that time is past. Prepare, therefore, for getting bloom in autumn. Elevate the plant out of bottom heat, if plunged; lower the temperature to 60° or 55°; nip out the point of the young shoots, to arrest growth; give no water, if the older leaves do not flag; expose to all the sun possible; and in a fortnight or three weeks cut down the plants, leaving merely as many buds as you wish to have shoots. Let the plant remain in the same place for nearly a week; then increase the temperature to 65° to 70°, and, if possible, a bottom heat of 80° to 85°. Moisten the ball gradually with water from 85° to 90°. The young shoots will soon break and grow, and must be thinned if necessary, and regulated. Every encouragement to growth must then be given in summer. Bottom heat as above; top heat from 70° to 90° by day, and from 65° to 70° at night. If this is persevered in, in from three to four months the shoots will have attained a good size; and if the last year's wood, from whence they started, was extra well ripened, they will show flower, perhaps, without any more care and ripening. But this does not generally happen; therefore, a ripening, resting process must be commenced in August and September, so that mere extension may be exchanged for consolidated growth. For this purpose, raise the pot gradually out of the plunging material; expose the plant fully to the sun; give it as high a temperature as the admission of more air will permit; lower the temperature at night, and give no more water than will be required to keep the leaves from flagging. The effect of this treatment is, not only to stop mere extension of growth at the point, but to concentrate the fruitful functions there, and to ripen and harden the shoots through their whole length. Continue this process for six or eight weeks, and then return the plants to a moist atmosphere, a high temperature, and encouragement to growth, and you may expect the flower-buds ere long to appear. When in bloom, to keep them so long, the plants should stand in an airy place, in a temperature averaging from 55° to 60°. When done flowering, and cleaned, the plants will be safe at from 45° to 50° and 55°, and kept dry, so as not to hurt the stems. Cut the plants back in spring, as you would do a spurred Vine, and repeat the above treatment. Though the plants may be made to bloom at any period, yet in our climate the autumn and winter will be the most natural time; as thus we can in our summers combine the wet and the dry seasons of their natural habitation, and rest the plants in winter, when our sun is at the lowest in power.

CYRTOCERAS REFLEXUM.—“Potted in peat bog, sandy loam, and one-quarter leaf mould. The flowers fall off when they begin to open.”

Heath soil, fibry, and mellow loam, in equal parts, and a third part formed of equal portions of charcoal, broken pots, and silver sand, I should consider a good compost for this pretty, Hoya-like plant. If any leaf mould were used at all, it ought to be sweet, and thoroughly aired.

The drainage, also, ought to be made very secure. When we have seen the flowers drop, it has generally been owing to defective drainage—the soil getting soured in too large a pot, which the roots could not well occupy; or keeping the plants in too low a temperature, and too wet at the roots. The leaves being succulent, the plant requires comparatively little water in winter, and should seldom be in a temperature below 60°. Neither this nor *Aphelandra* should be over-potted.

TYDEAS.—“Soil for such?” They are not at all particular. To grow them in perfection, at times collect handfuls of finely aired, and sweet, decomposed leaf mould, such as you might collect for half an inch in depth from exposed heaps. Place that under cover, and expose it to the winter's frost. Mix with it, in spring, equal portions of heath soil and fibry loam, all well sweetened by the air passing through it, but not too much decomposed by frequent turnings. These turnings are worse than mis-spent labour, though our florist friends may cry out heterodoxy. Have the pots thoroughly drained, and some well-dried pieces of old cowdung and charcoal over the drainage. Such plants do not require great depth of soil, but they like plenty of water when growing and blooming, will thank you for manure water if not too strong, and will gladly accept a place in your kitchen cupboard when their glory is gone,—resting themselves there, free from frost, until you wish them to start into growth next spring. The period of doing so must depend on conveniences. If there was only a greenhouse, it would be time enough to start them in May or June. When started early, in bottom heat, it is as well to place the tubers in a shallow pan, until they are several inches high, when they can be placed regularly in their flowering-pots, baskets, or pans, into soil properly aired and warmed beforehand.

IMPATIENS JERDONIÆ.—“What soil?” This is of less importance than general management. Fibry loam, with fibry heath soil, and a little silver sand, and well drained, will grow it well. As soon as it shows signs of growing, a little moist bottom heat will cause it to come strong and healthy. A temperature of from 70° to 85° will then suit it. When it comes into bloom, it will stand best in a temperature 20° lower than the above, and in an atmosphere comparatively dry. When done flowering, its thick, succulent stems will require very little water; and a lower temperature of not much below 50° will suit it. To thrive well, it must have several months of this quiet rest before it is excited into vigorous growth. Very small pieces will soon strike, and form excellent plants.

HEMIANDRA PUNGENS.—“Grown in a six-inch pot, and kept rather dry since October. When should it be cut down?”

If it shows no sign of blooming in spring, we should be inclined to prune it back freely, and grow it on rapidly, and expose it to all the sun and air possible in autumn. What say those friends who have grown this species successfully?

CANTUA DEPENDENS.—“Kept rather dry since July. All the leaves have fallen off. The wood is hard and ripe. I wish it to flower in spring. How should I act?”

This is a shy bloomer at times. I have had it nicely in flower by growing it freely in summer, keeping it dryish and full in the sun in autumn, and resting it in a low temperature, and keeping it dry in winter, the flowers coming with the fresh growth in the spring. I have by the very same method next to failed in getting abundance of flowers. I think you commenced keeping the plants dry quite early enough; but now the best plan would be, to continue the same treatment, keeping the plant as cool as possible until about March, when it may be placed in the warmest end of the greenhouse, and encouraged to grow. The flowers, most likely, will come most freely from the points of the shoots. If the plant does not bloom very freely, it would be as well to keep it in the same pot, and just to cut back to two or three

eyes the small side-shoots that will be formed, and these will most likely bloom the following year. I think you have a good chance. Let us know how you succeed.

PLEROMA ELEGANS.—"In a six-inch pot. Potted last June in bog, sand, and loam, and a bit of leaf mould. It is now standing in a Peach-house, at a temperature of from 40° to 55°. Shall I keep it cooler and drier when in bloom?"

Supposing the plant is a young one, I should not be anxious about its flowering this season at all, though very likely a few of the shoots may do so. It would be as well for the plant if it did not bloom until the summer of 1860, as then it would be well established, and most likely bloom profusely every year. I should then continue it in a temperature at from 45° to 55°. At that heat, it may incline to be straggling in growth; but this may easily be neutralised by stopping any forward shoot as it appears, until May or June, tying the plant well out and regularly, that every part may be well exposed. In the heat of summer, an airy, cold pit, or a cool greenhouse, where the plant can be shaded from bright sunshine, and yet have a free circulation of air, will suit it. By May, it will most likely need transferring to a nine-inch pot; and sandy heath soil and fibry peat, with pieces of charcoal, broken bricks, and silver sand, to keep it open, will suit it well. Keep it close and shaded for a few weeks after potting, but give air pretty freely at night. Stagnant moisture will ruin it very quickly. Wherever grown in summer, it should be housed early, as it is very impatient of cold, cutting winds. It always requires a warmer place in winter than would suit the plants in a cool greenhouse. The medium temperature should be from 45° to 50°, and a little more, with a rise of 10° from sunshine. The atmosphere in which it grows must not be stagnant, neither should a cold air strike directly on the plant. The position must, therefore, be chosen so that these desirables may be secured. The roots must never be dried, neither must they be often watered in winter. As the days lengthen, in March and onwards, the increase of the sun's power will demand more waterings; and by May and onwards the bloom-buds will continue to open. It may then be kept somewhat cool, and shaded from the fiercest sun. When done flowering, the plant should be slightly pruned, kept close, and encouraged to grow, and shifted into another pot, if deemed necessary, inuring it to air and sun by degrees, that the growth may be well hardened before the end of autumn. Rest as above in winter, and follow a similar system in the following summer.

"How should I treat the following, in order that they may bloom? I have tried hard pruning, and liberal shifts; but for the last two years they have been in the same pots (12's), and had no pruning at all."

ERIOSTEMON BUXIFOLIUS.—If this plant is kept long in the same pot, it may bloom pretty freely every May and June, with receiving very little pruning, as the short growths that are made every summer will be covered with bloom the succeeding one. A plant neither pruned nor shifted, however, is apt to wear out and get unsightly. The following may be considered main points of culture:—Soil. Two parts of fibry peat to one of fibry loam, when the plants are young, and more loam as the plants get older, lightened with silver sand and nodules of charcoal. When the plant is young, stop it, to make it bushy at bottom. It generally looks best in the pyramidal form. A common greenhouse temperature, not below 45°, will suit it in winter. It is easily assisted into bloom. When in bloom, from 45° to 55° will suit it. When done blooming, give what pruning the plant may require, in order that it may get furnished all over with nice young wood of about equal strength. This is the time it needs extra assistance—from syringings, a moist atmosphere, shading from bright sunshine, and a highish temperature, such as it might receive in a Peach-house, or viney, instead of an airy greenhouse. When the young growth

is coming away well, then is the time to reshift the plant, if it needs it, or to give it a fresh top dressing, and weak manure waterings. Towards autumn, as the growth is pretty well finished, expose it gradually at first, until the plant stands almost in the full sun, and in a free current of air, in order that the young wood may be well ripened. House early in the greenhouse, and in winter let it be free from cold draughts; and as the days lengthen and get warmer in spring, the buds and flowers will swell and open all over the plant.

ADENANDRA SPECIOSA.—This will thrive under similar treatment, but will require much less care. It generally produces its pinkish, Rue-like flowers in May and June; and after that period, when pruned back, its proper home would be a cold pit, kept rather close, and shaded a little for six weeks or so; more light given then, and as much sun and air as the plant would stand afterwards. Heath soil and loam will grow it well. It will be as well, if the pot is not too much exposed to the rays of the sun in summer.

HEXACENTRIS MYSORENSIS.—If you bloom this without any pruning, it must be because you can allow it to ramble over a great deal of space. It may grow pretty well in a twelve-inch pot, for two or three years, if you give rich surfacings and rich manure waterings. We have flowered it by two modes, analagous to the long rod and the spur mode of Vine growing. In the first case, two or three shoots were grown the one summer freely; water curtailed in autumn; temperature in winter from 55° to 65°; a piece taken off the end of the shoots in spring; and as the temperature was raised in spring, short, stumpy shoots, with branches of flowers, came from the buds at the joints. These, pruned back to an eye or so, and the plant kept pretty open and free from small wood and shoots, produced flowers again the following year, but I thought hardly so well as from the well-ripened, longer shoots. Without any pruning at all, I should think the plants would become such a thicket of spray, that the sun could hardly exert any power in setting flower-buds. This is one of those great beauties that well deserves more encouragement in plant-stoves that are kept at a high temperature. The spider, thrip, and mealy bug must be guarded against.

R. FISH.

BRITISH POMOLOGICAL SOCIETY.

(Continued from page 246.)

CLASS D.—PREMIUMS of £1 and 10s. for the best and second best Six fruits of OLD NONPAREIL Apple.

Five dishes were exhibited in this class, but the competition was altogether very unfavourable, tending to prove that this excellent old variety scarcely exists in a healthy state, and producing good fruit.

The first prize was awarded to Mr. SWINERD (gardener to John Swinford, Esq., Minster Abbey, Isle of Thanet), who sent two dishes—one from a dwarf, growing in hazel loam, over brick earth; tree subject to canker. Fruit small, very juicy and sharp, and possessing the true Nonpareil flavour. The second dish was from an espalier, in rich garden mould, and less subject to canker. Fruit large, very juicy and sweet, but not so true in flavour.

The second prize, to Mr. HOLDER, of Reading, for a dish, from a standard (soil, see next class). Fruit juicy, acid, and with a slight, but not high Nonpareil flavour.

Mr. SHORT (gardener to the Duke of Cleveland, Raby Castle, Durham), sent a dish from a very old tree, on a south wall; situation low and damp. Fruit large, very juicy, and sub-acid; deficient in Nonpareil flavour; their merit was, moreover, much injured by having been packed, or laid, in straw, or some material which had spoiled their flavour. Mr. Short reports that his predecessor, Mr. Roberts, was in the habit of painting the trees with a mixture of cowdung, soot, and a little soap, previous to which they had been in a cankered and

dying state, covered with scale and American blight, but that now they are healthy, vigorous, and productive.

Mr. WRIGHT (gardener to Sir H. Cotterell, Bart., M.P., Garnon's, near Hereford), sent a dish from an old standard; soil strong loam, over marl, naturally dry. Fruit dry, acid, and affected by subcutaneous disease.

CLASS E.—PREMIUMS of £1 and 10s. for the best and second best Six of any other Dessert Apple in season, excepting OLD NONPAREIL.

The first prize was awarded to Mr. JAMES HOLDER, of Reading, for GOLDEN HARVEY, from a standard; soil very rich, subsoil sandy loam, over gravel. Fruit fine-coloured, very richly vinous, and sugary in flavour, and, but for being somewhat shrivelled,—probably owing to having been somewhat too early gathered,—they would have been, in every respect, one of the best dishes ever laid before the Society.—The same variety was also sent by Mr. SIMPSON (gardener to Lady Molyneux, Stoke Farm, near Slough). Very plump and juicy, but small, and slightly astringent.

The second prize, to Mr. ROBT. DUNCAN (gardener to J. Malcolm, Esq., Lamb Abbey, Eltham, Kent), for LAMB ABBEY PEARMAIN, from a tree seventy years old; soil loam and gravel, over chalk. In very fine condition, well coloured, juicy, rich, and sugary.

Of SCARLET NONPAREIL, five dishes were sent, none of high merit, but in consecutive value, as follows:—By Mr. M'LAREN, under the name of *Old Nonpareil*, from standards. Medium sized, juicy, but acid, and over-ripe.—And from espaliers, much smaller in size, with rather more sugary flavour.—By Mr. ELLIOTT, Lillishall, from an arched trellis. Fruit large, sweet, and juicy, but over-ripe.—By Mr. NEWTON, from standard. Very large, and in fine condition, but rather dry, and not high flavoured.—And by Mr. SHORT, from old tree, on a south wall (see *Nonpareil*). Fruit small, but tender fleshed, juicy, and sweet.

SWEENEY NONPAREIL was again sent by Mr. WHITING (see last report). In good condition, very juicy, thin skinned, and sugary flavour. This was one of the eight best dishes selected by the Committee for final adjudication.

AUTUMN NONPAREIL, by Mr. SWINERD, from standard. This was an Apple of considerable merit, one of the best eight, and apparently very little known, the name not appearing in catalogues, although, probably, recognised under some other name (said to be obtained from Mr. Kennett's nursery). Fruit oblate, slightly conoid: average greatest diameter—transversely, two inches and a half; longitudinally, two inches. Stalk medium length, slender, deeply inserted, eye puckered; colour pale yellowish green, almost entirely covered with pale russet; flesh tender, very juicy; nice Nonpareil flavour.

AROMATIC RUSSET, by Mr. SWINERD, from standard, one of the best eight. Very juicy, with rich vinous flavour.

CORNISH GILLIFLOWER, by Mr. FERGUSON, of Stowe, in very fine condition, one of the best eight. Juicy, rich, and sugary.—By Mr. NEWTON. Fine in appearance and juiciness, but not equal in condition to those exhibited at previous Meetings, and injured by having been in contact with some material which had given its flavour to the fruit.—A variety very much resembling the above, but harder, heavier, and later, was sent by MARK SHEPHERD, Esq., Howard Lodge, Upper Tulse Hill. It was asked for again, with more information regarding it.

OLD GOLDEN PIPPIN, by the same gentleman, and also by Mr. NEWTON, from standards. Both very fine in appearance, plump, juicy, and possessing the true flavour of the variety in as fine a degree as it is usually found. They were of the best eight.—Under this name, also, was sent a variety, evidently nearly related, but not quite true, by Mr. SHORT; not equal to the above in texture or flavour, sweet but dry.

RUSSET NONFAREIL, by Mr. SWINERD (without name,

No. 4), from a standard. In good condition, externally, but dry and deficient in flavour.

GOLDEN RUSSET, by Mr. NEWTON, from a standard. This was another variety not known in catalogues. Fruit oblate: average diameter—transversely, 2½ inches; longitudinally, 1, 7-16 inches: eye slightly depressed, calyx perfect; stalk, long, slender, deeply inserted; skin thick, pale green, very russety, with large, dark excoriations; texture juicy; flavour very rich and sweet. This, however, with several others of Mr. Newton's fruits, were much injured in flavour by having been laid on hay, or something similar.

SCREVETON'S GOLDEN PIPPIN, by Mr. NEWTON, from a standard. Fruit apparently gathered too soon, tough, and not juicy.

RIBSTON PIPPIN, by Mr. ELLIOTT, grown in the gardens of the MARQUIS of STAFFORD, Tarbot House, Ross-shire, on a wall; soil light, over sand, about 400 yards from the sea; trees old, reported to be vigorous. The fruit had suffered in flavour from packing, but was very juicy and sweet, quite equal to another dish of the same kind, by Mr. WRIGHT (Garnon's, Hereford), from a standard, and which had been good flavoured, though rather dry and slightly over-ripe. Old trees are reported to be *healthy* in this case also. Soil strong loam, over marl, naturally dry.—Another dish, but not true, was sent by Mr. SHORT.

GOLDEN DROP, by Mr. SWINERD, in good condition, from a dwarf bush. Flesh tender, very juicy, sweet, and vinous.

BLENEHIM PIPPIN, by Mr. ELLIOTT, Lillishall. Very fine in size and appearance, but dry and deficient in flavour.—By Mr. WRIGHT. Very large, but not good enough for dessert.

Cox's ORANGE PIPPIN was again sent by Mr. SIMPSON. Very juicy and good, but damaged in flavour, by having been in contact with straw.—And by Mr. HOLDER, from a pyramid. Tender and juicy, sweet, but not richly flavoured.

NEWTOWN PIPPIN, by Mr. HOLDER. Evidently true, by the peculiar taste and aroma; but so small, and otherwise out of character, as is usually the case when grown in this country, that it would scarcely be recognised.

(To be continued.)

CYCLAMEN ATKINSII.

As I ought to know something about the Cyclamen called *Atkinsii*, having had the pleasure to describe it, and to name it after one of the most successful and enthusiastic of living cultivators of these plants, you will allow me, perhaps, to correct Mr. Beaton, who (p. 224) says, it is "more properly *Atkinsonii*." This charming variety, the result of a cross between *C. coum* and *C. Persicum*, was raised by Mr. James Atkins, formerly a highly respected member of the nursery and seed trade, now an enthusiastic amateur in botanical and other scientific pursuits. It was figured and described in the "Garden Companion" (p. 89, 1852), published by Messrs. Orr and Co. I remember a glorious mass of it, smothered with blossom, the result of the most perfectly successful cultivation, being exhibited, about the same time, by Mr. Atkins, at one of the Regent Street meetings of the Horticultural Society. I think I am entitled to say, that it is properly *C. Atkinsii*, and not *C. Atkinsonii*. It is a beautiful thing, with only one drawback—the flowers are scentless.

A similar case of corruption of name may be met with in a pink-flowered, shrubby Statice, introduced some years since from the Cape, and whose history "I know all about." This was introduced and first flowered by Mr. Dickinson, at that time a nurseryman residing at Guildford, and was figured and named after him *S. Dickinsonii*. It now, not unfrequently, appears in lists as *S. Dicksonii*, and rejoices in the further alias of *S. rytidophylla*, given to it long subsequently by Sir W. Hooker.

While my pen is in hand, I may just correct another slip of Mr. Beaton's, or the printer's. At p. 176, *Sida*, several times printed, is evidently a misnomer, *Dixa* being as evidently intended. This is a difference of some importance, the former being the name of a Mallow, the latter that of a fine terrestrial Orchid.—M

THE TASMANIAN HIVE.

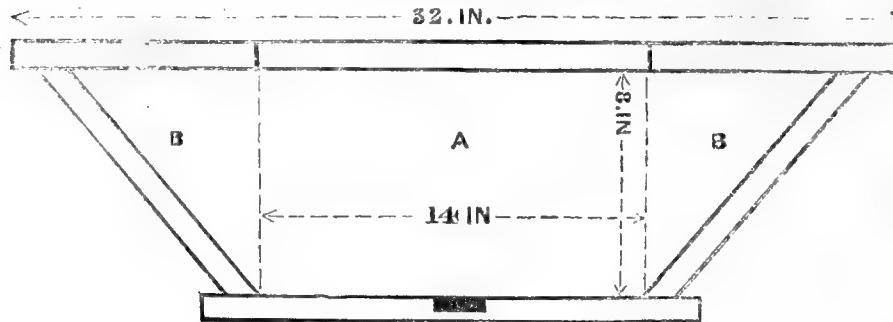


FIG. 1.—ELEVATION.

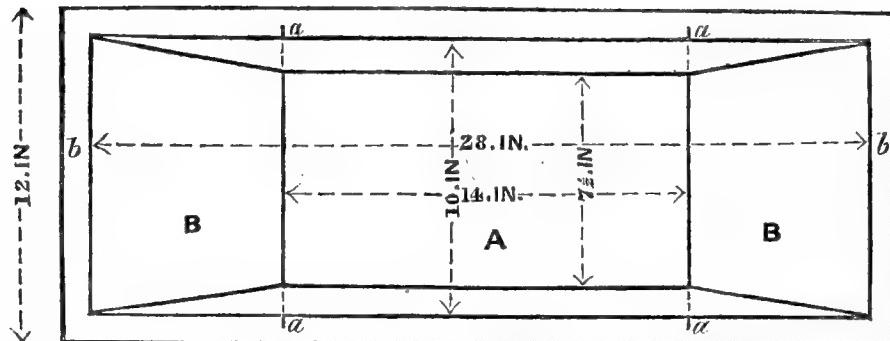


FIG. 2.—VIEW LOOKING INTO THE INTERIOR.

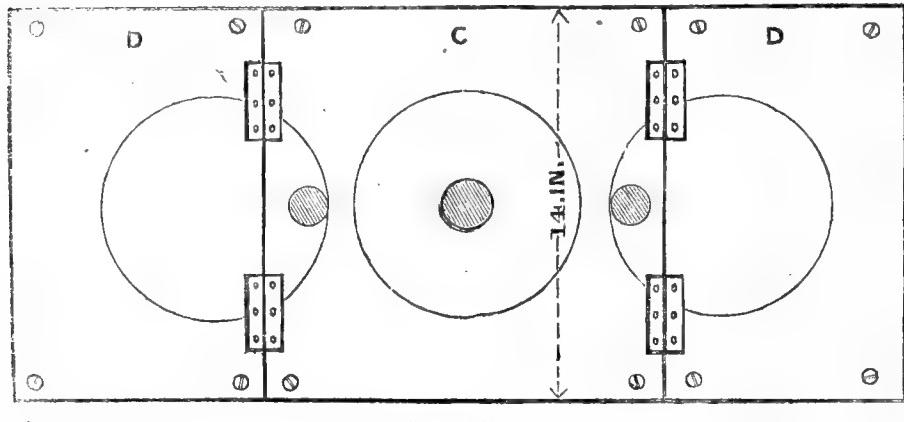


FIG. 3.—TOP BOARD.

I HEREWITH send you a plan of a hive of my own invention, or rather improvement, which I first used, and found to answer extremely well, in Tasmania, and which I have, therefore, designated "The Tasmanian Hive." It is a bar-hive. Its peculiarity consists—first, in its capability, as a single hive, of enlargement or contraction, in autumn or in spring, to suit the wants of the bee; secondly, in the unusual facility it affords for the extraction of honey-comb, without destroying the bees, or disturbing the hive.

On first populating this hive, only the centre part (A) is given to the bees. This averages, in the clear, fourteen inches by eight inches and three quarters, and eight inches deep, bars included; "averages," I say, because it will be seen, from Fig. 2, that the sides (*a a*) contract inwards towards the base of the hive, as well as the sides (*b b*). This, obviously, is for facility of lifting out the bars with comb attached, as well as for a support to the combs themselves. The centre part of the hive is divided off from the chambers (*B B*) by partitions of wood or zinc, permanently affixed to bars, which rest on the sides of the hive at *a a*. These partitions are made to sit quite loose, and must be left to the bees to fasten to the sides of the hive, which they will soon do with propolis. When it is desired to give additional room to the bees in the honey season, it will be easy to break, or cut away, these propolis fastenings, and to take out the partitions,

Their place must then be supplied with ordinary bars, with guide combs carefully attached. Care must be taken that these bars are quite clear of the centre part of the top board (Fig. 3), so that they may be easily removed, by merely lifting up the end boards (*D D*). From the sloping nature of the chamber sides (*b b*, Fig. 2), it will be seen how easy it is to pass a knife round and under the outermost comb nearest to *b b*, owing to the small depth of this comb; also, how easy it is, this outer comb being once removed, to get at the other combs in order. Moreover, these combs, from their comparatively small depth, and their distance from the central heat, will seldom, if ever, be found to contain eggs, or young bees, or bee bread. A whiff or two of smoke will soon clear them of bees, without disturbing the main body of the citizens, while these combs are being removed. The several parts of the top board are screwed down with well-greased screws, easy to be taken out; and it will be seen that there are three holes in the centre part, communicating directly with the middle of the hive.

It was from a hive similar to this, only made of straw, that I obtained 79½ lbs. of virgin honeycomb in the Tasmanian summer of 1856-7, being the produce of a stray swarm of the same summer. There was also honey enough left for their winter store.—B. AND W.

VARIEGATED STOVE PLANTS.

PLANTS with variegated leaves have, with some cultivators, always been esteemed, though others have looked upon them as plants that were in a state of disease, whilst some writers have as soundly maintained that variegation is as consistent with perfect health and long life, as such as have entirely green foliage. Be that as it may, one fact is certain, that plants with various-coloured leaves are now highly esteemed, and very largely grown in many places. They are also a very important item at various exhibitions, both at the metropolitan shows and also at the most distant provincial exhibitions. For decorative purposes also, wherever there is a stove plant-house, they are found in considerable numbers. There seems, indeed, to be at various epochs a kind of mania for certain plants or flowers. There was once a rage for Tulips, and that to such an extent, that it was named Tulip mania, or Tulip madness. In pot plants, Heaths once were fashionable, then Orchids, then Ferns, and now these variegated plants are the fashion of the day; combined with plants that have beautiful, or singular foreign-looking foliage.

Inquiries have been sent to the Editor of THE COTTAGE GARDENER, for information on the culture and the names of variegated plants, which inquiries have induced me to undertake to write a paper or two about them; and the information that I am able to give will, I trust, be useful to, at least, new beginners to cultivate them. I do think many of them exceedingly beautiful, and that persistently. Many stove plants are beautiful when in flower, but the greater part of these various-coloured leaved plants are most lovely objects all the year round—a great recommendation, sufficient to induce growers to cultivate them largely. A collection of stove plants, indeed, is now considered defective, if variegated species are absent.

In my younger days, some thirty years ago, the species of variegated stove plants was very limited indeed. Loudon, in his "Encyclopedia of Gardening," classes many kinds of stove plants, but entirely omits these. Yet nurserymen then, and for years previously, esteemed variegated plants highly. It was thought quite a hit to obtain a new variegated Elm, Oak, Ash, Sycamore, or any other tree, either by seed or a chance spray, with coloured foliage. Whenever such a case happened, the lucky plant, or branch, was immediately propagated by budding or grafting. So it was, also, with shrubs, evergreen or deciduous. In the common Holly, they were eminently successful, as we all know; but in the Laurels and Sweet Bays, no permanent success was achieved. The *Aucuba Japonica* came to hand from Japan, with leaves already spotted, and a most useful plant it has proved. I have seen some plants of it with leaves nearly green, but such were invariably grown in rich soil, in the shade. This is, indubitably, a natural variegation, and the plants are as healthy as one could wish. There are, also, some herbaceous plants with leaves very prettily variegated. This variegation of plants is an exceedingly curious and interesting subject. How is it obtained?—what causes it? What process can we take to cause plants, hitherto with green leaves, to change and give us parti-coloured foliage? We are quite in the dark on this subject. One point is curious enough. Plants with fine variegated foliage have, with very rare exceptions, insignificant flowers—instance the Holly, the *Aucuba*, the *Croton*, and even the far-famed *Farfugium grande*. The flowers are inconspicuous, and, to use a common phrase, are not worth a button. It seems as if nature, having given these plants beautiful leaves, thought fine flowers a superfluity; indeed, plants that have sweet, large, showy flowers, would not be thought improved if they had variegated foliage. We should certainly be shocked, and think it unhealthy, if a Rose tree produced variegated leaves, or even a Camellia, or Tulip, or Carnation. In fruit-bearing plants, also, we should not be struck with admiration, to see a variegated-leaved Apple, Pear, Cherry, Peach, or Plum tree. Should any one sport into variegation, it would be looked upon as a monster, no longer valuable for its fruit. It would be kept, if kept at all, merely as a curiosity. Thus, we see there are limits even in obtaining variegation to be consistent with good taste.

I am, I fear, running on too far with these preliminary remarks, yet the subject is so eminently curious, that my head transmitted the thoughts to my pen, and I jotted them down as they occurred to me. On this occasion, I will conclude with giving a selection of twenty-four of the most beautiful variegated stove plants, and intend shortly to enter fully into their culture.

The following will suit "AN INQUIRER," provided he has a

house heated to from 70° to 80° in summer, and from 60° to 65° in winter:—*Anoectochilus Lobbii*, *A. setaceus*, *A. zanthophyllum*; *Ananas sativus variegatus*; *Begonia Griffithsii*, *B. Rex*, *B. splendida argentea*, *B. Thwaitesii*; *Cissus discolor*; *Croton angustifolium pictum*, *C. pictum*, *C. variegatum*; *Cyanophyllum magnificum*; *Dieffenbachia seguina picta*; *Dracena terminalis versicolor*, *D. nobilis*; *Graptophyllum hortense pictum*; *Hoya carnosa picta*; *Maranta lineata alba*, *M. pardina*, *M. regalis*; *Pandanus Javanicus variegatus*; *Pavetta Borbonica*; *Sonerila margaritacea*.

These twenty-four species of variegated plants have their foliage persistent—that is, they do not die down in winter. The first three require to be grown in chopped sphagnum, with some half-decayed Oak leaves upon the drainage, which drainage should occupy at least one-third of the depth of the pots. They must be kept constantly covered with clear bellglasses.

The following have large, very ornamental, foliage, but die down in winter. During that state of rest they must be kept moderately dry. Any light soil will suit them:—*Caladium bicolor*, *C. discolor*, *C. pictum*, *C. rubricaulis*, and *C. tricolor*.—T. APPLEY.

MILDEWED PEACH TREE SHOOTS.

WHAT is it that has affected the enclosed Peach shoots? The tree they are taken from, is one of seven growing in the border of an orchard-house, trained to a galvanised wire trellis. The disorder appeared about a week ago, as a white mould, on the ends of all the shoots on one tree. The others are unaffected at present.—A CONSTANT READRE.

[The shoots are mildewed. Probably they are from a *Royal George*, which is very subject to have its shoots affected with mildew, in the autumn. As your tree seems to be severely attacked, its roots have, probably, entered into the subsoil, which is unfavourable. The tree should be carefully taken up and replanted, spreading its roots as near the surface as possible in doing so. It may then be pruned, and washed over with the mixture recommended by Mr. Errington,—soft soap, soot, lime, and sulphur, made into the thickness of paint,—and every shoot covered with it. The other trees may be painted with the same composition, with the best possible effect; for the mixture often prevents the attacks of the Peach aphides—green and brown—in early spring.]

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 250.)

CHERRIES.

ROYAL DUKE (*Donna Maria*).—Large, oblate, and handsomely shaped. Skin deep, shining red, but never becoming black, like the May Duke. Stalk an inch and a half long. Flesh reddish, tender, juicy, and richly flavoured. Middle of July.

Royale. See *Jeffreys' Duke*.

Royale Hâtive. See *May Duke*.

St. Margaret's. See *Tradescant's Heart*.

Seize à la Livre. See *Reine Hortense*.

SHANNON MORELLO.—Above medium size, round, and flattened at the stalk. Skin dark purplish red. Stalk long and slender. Flesh tender, reddish purple, juicy, and acid. August.

Sheppard's Bedford Prolific. See *Black Tartarian*.

Small May. See *Early May*.

DE SOISSONS.—Medium sized, roundish, inclining to heart-shaped, and somewhat flattened at the apex. Skin dark red. Stalk not more than an inch long. Flesh red, tender, and juicy, with a brisk and pleasant sub-acid flavour. A good cherry for culinary purposes. Ripe in the middle and end of July.

Spanish Heart. See *Black Heart*.

SPARHAWK'S HONEY (*Sparrowhawk's Honey*).—Medium sized, obtuse heart-shaped, and very regular in shape. Skin thin, of a beautiful, glossy, pale amber, becoming a lively red when fully ripe, and somewhat translucent. Stalk of moderate length, rather slender. Flesh pale, juicy, and sweet. Middle of July.

Spotted Bigarreau. See *Bigarreau de Hollande*.

Sussex. See *Kentish*.

TABDIVE DE MANS (*Merveille de Septembre*).—Small, ovate, flattened at the stalk. Skin smooth and shining, clear red in the shade, and mottled with purplish red where exposed. Flesh firm, sweet, juicy, and nicely flavoured. This, like *Belle Agathe*, hangs very late, but it is not so large nor so good as that variety.

TECUMSEH.—Above medium size, obtuse heart-shaped, flattened on one side. Skin reddish purple, or dark brownish-red, mottled with red. Flesh reddish purple, half-tender, very juicy and sweet, but not highly flavoured. Middle and end of August. Valuable as a late variety.

TOBACCO-LEAVED (*Four-to-the-Pound*; *Ounce Cherry*; *Quatre à la Livre*).—Rather below medium size, heart-shaped, and somewhat flattened on one side, and terminating at the apex in a curved fleshy point. Skin thin, pale amber, mottled and spotted with red. Stalk slender, two inches long. Flesh pale-amber coloured, firm, juicy, and with a sweet, rich flavour. Beginning of August. Leaves nearly a foot long.

TRADESCANT'S HEART (*Elkhorn*; *St. Margaret's*; *Large Black Bigarreau*; *Bigarreau Gros Noir*; *Guigne Noire Tardive*).—Of the largest size, obtuse heart-shaped, indented and uneven on its surface, and considerably flattened next the stalk; on one side marked with the suture. Skin at first dark red, but changing when fully ripe to dark blackish-purple. Stalk slender, an inch and a half to an inch and three quarters long. Flesh dark purple, adhering firmly to the stone, firm, sweet, and briskly sub-acid. End of July and beginning of August.

TRANSPARENT GEAN.—Small, regularly heart-shaped. Skin thin, transparent, and shining, pale yellow, and finely mottled with clear red. Stalk two inches long, slender. Flesh pale, tender, and juicy, with a sweet and somewhat piquant flavour. Middle and end of July.

Trempee Précoce. See *Baumann's May*.

De Villenne. See *Carnation*.

Virginian May. See *Kentish*.

Ward's Bigarreau. See *Monstrous Heart*.

WATERLOO.—Large, obtuse heart-shaped, depressed at the apex, and flattened on one side. Skin very dark reddish-purple, almost black, and covered with minute pale dots. Stalk an inch and a half long, very slender. Flesh light reddish-purple, but dark purple next the stone; tender and juicy, with a sweet and rather rich flavour. End of June and beginning of July.

Wax Cherry. See *Carnation*.

WERDER'S EARLY BLACK.—Very large, obtuse heart-shaped, with a deep suture on one side. Skin tough, shining, deep black-purple. Stalk short and stout, about an inch and a half long. Flesh purplish red, tender, very juicy, and with a very sweet and rich flavour. Middle and end of June.

West's White Heart. See *Bigarreau*.

White Bigarreau. See *Harrison's Heart*.

WHITE HEART (*Amber Heart*; *Dredge's Early White*; *White Transparent*).—Above medium size, oblong heart-shaped. Skin whitish yellow, tinged with dull red next the sun. Stalk two inches long, slender, set in a wide cavity. Flesh half-tender, sweet, and pleasant. Stone large. End of July.

WHITE TARTARIAN (*Fraser's White Tartarian*).—Medium sized, obtuse heart-shaped. Skin pale yellow. Stalk two inches long, slender. Flesh whitish yellow, half-tender, and sweet. Early in July.

White Transparent. See *White Heart*.

LIST OF SELECT CHERRIES, ARRANGED ACCORDING TO THEIR ORDER OF RIPENING.

I. FOR GARDENS.

JUNE.	Osceola Royal Duke Delicate Duchesse de Palluau Monstrous Heart Joc-o-sot Mammoth Mary Bigarreau
Belle d'Orléans	
Early Purple Gean	
Baumann's May	
Early Prolific	
Werder's Early Black	
Bowyer's Early Heart	

For Dessert Use.

JULY.	Knight's Early Black Black Tartarian Waterloo Governor Wood Belle de Choisy May Duke Jeffreys' Duke Cleveland Bigarreau Rockport Bigarreau Black Eagle Elton
AUGUST.	Late Duke Florence Kennicott Red Jacket Tecumseh
Coe's Late Carnation	
Büttner's Yellow	
Bigarreau de Hildesheim	
Belle Agathe	

For Kitchen Use.

Kentish	Belle Magnifique
Griotte de Chaux	Morello

II. FOR ORCHARDS.

These being vigorous-growing and hardy varieties, and all, in various degrees, abundant bearers, are well adapted for orchard planting.

Early Prolific	Kentish
Knight's Early Black	Mammoth
Black Tartarian	Mary
Adams' Crown	Bigarreau
May Duke	Amber Gean
Elton	Late Duke
Black Hawk	Kennicott
Büttner's Black Heart	Red Jacket
Hogg's Black Gean	Tecumseh
Hogg's Red Gean	Belle Agathe

(To be continued.)

THE SCIENCE OF GARDENING.

(Continued from page 248.)

ALTHOUGH temperatures ranging between 60° and 80° are those most usually propitious to germination, yet, as already noticed, a much higher temperature can be endured by seeds without their vitality being destroyed, and, indeed, in some instances, may be employed with great advantage, when the seed, from age or other cause, germinates with difficulty. The height of the temperature required for destroying their vitality varies with the species of seed. In water at 122° F., we have seen that the germinating power of corn was destroyed; but Dr. Lindley found the seeds of a Raspberry germinate, though they must have endured a temperature of 230° in the boiling syrup of the jam, whence they were taken; and other instances are known where Peas submitted to a temperature of 200°, and, left in the water for twenty-four hours until cool, germinated more readily

than other Peas not so treated. The seeds of *Acacia lophantha* also produced seedlings after being boiled in water for five minutes. The effects produced by this high temperature, are to permanently soften the cuticle of the seed, and render it more readily permeable by the air; also aiding the conversion of the starchy components of the seed into saccharine matter; but if the boiling be continued until the composition of the germen is altered, the germinating power of the seed, in every instance, is destroyed.

These facts lead to the very important inquiry, whether the soil has any influence over the temperature occurring to the seed, and to the roots of plants placed beneath its surface? The researches of M. Schubler were the first to answer this query in the affirmative. This distinguished German chemist found, that when the temperature of the upper surface of the earth was 77° in the shade, various soils, exposed to the sun from eleven to three, in vessels four inches square and half an inch deep, attained the temperatures shown in this table.

	Wet.	Dry.
Siliceous sand, bright yellowish grey	99.1	121.6
Calcareous sand, whitish grey	99.3	112.1
Gypsum, bright white grey	97.3	110.5
Sandy clay, yellowish	98.2	111.4
Loamy clay, yellowish	99.1	112.1
Stiff clay, or brick earth, yellowish grey	99.3	112.3
Fine blueish grey clay	99.5	113.0
Lime, white	96.1	109.4
Magnesia, pure white	95.2	108.6
Garden mould, blackish grey	99.5	113.5
Arable soil, grey	97.7	111.7
Slaty marl, brownish red	101.8	115.3

The results of M. Schubler's experiments demonstrate that which our knowledge of the laws of caloric would have induced us to pre-suppose—namely, that light-coloured earths, by reason of their reflecting most rays of heat, are warmed much more tardily than dark-coloured earths. It was this conclusion which induced us, many years since, to try the effect of sprinkling coal ashes over rows of autumn-sown Peas. The Peas invariably appeared above the soil some days before those in rows not similarly treated. This acceleration of vegetation continued equally marked throughout their growth, and is further explained by other experiments of M. Schubler, which testify that those soils in the above table which absorbed the heat most readily retained it most tenaciously, and, consequently, were longest cooling. Magnesia cooled in one hour and twenty minutes as much as the garden mould did in two hours and sixteen minutes, and the slaty marl in three hours and twenty-six minutes.

From more recent experiments, made in the Horticultural Society's Garden at Chiswick, and in other parts of England, we have the following results, confirming M. Schubler's experiments.

In the Chiswick garden,—

1844.	Minimum Temp. of air.	Earth 1 foot deep.	Earth 2 feet deep.
Dec. 4	22	40	43
5	14	38	43
6	14	37	42
7	20	37	41
8	26	36	41
9	28	36	40
10	28	36	40
11	22	36	39

In a stiffish loam on a gravelly subsoil near Sheffield, after a fortnight's exposure to a minimum temperature, varying between 21° and 31°, the soil had frozen to a depth of four inches and a half. But at lower depths the temperatures were as follows:—

At 6 inches	34°
" 12 "	36½°
" 24 "	39°

In every instance the lighter soils were frozen to a less depth than the more tenacious, the former in no case having the frost penetrate lower than six inches, but in heavy soils two inches deeper.—(*Gardener's Chronicle*.)

The following table, kept by Mr. Sharp, the scientific manager of the Winchester gas-works, shows the lowest temperature of the air at night, and its highest temperature by day, during the

January of 1845, as well as the temperature of the soil at six inches, and at twelve inches below its surface. The soil is black, rich, and siliceous, resting on a chalky subsoil:—

January.	Night.	Day.	Ground.		January.
			6 in.	12 in.	
1	35	44	39	39	1
2	34	38	37½	39	2
3	25	40	34	37	3
4	32	47	35	36	4
5	38	51	38	38½	5
6	42	52	41	40	6
7	45	50	42½	41½	7
8	35	42	40	41	8
9	32	39	27½	40	9
10	35	39	37½	39½	10
11	43	50	42	41½	11
12	39	45	42	42	12
13	38	45	41	41½	13
14	36½	49	40	41½	14
15	38	46	40	41	15
16	38	46	40	41	16
17	39	45	40	41	17
18	38	48	40	41	18
19	32	46	38	40½	19
20	34	45	38	40	20
21	30	42	36	39	21
22	25	47	35	39	22
23	35	49	40	39½	23
24	36	49	40	40½	24
25	29	51	37	39	25
26	42	47	41	41	26
27	34	46	38	39	27
28	28½	40	35	37½	28
29	27	39	34	37	29
30	31	39	38	37	30
31	25	35	33	36	31

Professor Dove, of Berlin, published, in 1855, the following table, giving the mean results of his observations made at that city during the five previous years:—

	4 feet above the ground.	On the surface of the ground.	At a depth below the surface of						Differ- ence.	
			1 foot.	1½ ft.	2 feet.	2½ ft.	3 feet.	4 feet.		
January.....	32.67	33.35	36.72	37.80	38.18	39.02	40.07	42.44	44.44	11.09
February	32.74	32.60	36.18	37.19	37.67	38.23	39.31	41.47	43.13	10.53
March	35.53	36.05	37.33	38.00	38.14	38.54	39.17	40.91	42.28	6.23
April	45.68	44.80	43.72	43.83	43.52	43.63	43.43	43.88	44.01	0.76
May	58.59	57.24	52.13	51.48	50.76	50.72	49.57	48.96	48.15	9.09
June	63.61	60.48	57.80	58.15	56.68	56.66	55.26	54.41	52.99	7.49
July	68.47	65.43	62.46	61.04	60.55	60.48	59.00	57.78	56.21	9.22
August	64.91	61.97	60.57	60.53	60.50	60.66	59.72	59.00	57.85	4.12
September	58.16	56.72	57.35	57.78	58.10	58.41	58.01	58.01	57.49	0.77
October	49.43	48.31	51.12	51.80	52.25	52.52	52.97	54.18	54.88	6.57
November	38.63	38.79	43.94	45.07	45.68	46.44	47.43	49.55	51.26	12.47
December	34.43	34.97	39.20	40.19	40.68	41.69	42.59	45.00	47.09	12.12

The temperature of the soil, especially near the surface, varies considerably, according to the mildness or coldness of the season. Dr. Lindley very erroneously concluded from this fact, that flower-seeds should not be committed to the ground until it attained a temperature of 46°. So far from this precaution being needful, it is a well-known fact, as already stated, that seeds—are uninjured by the severest frosts, unless these occur after the seeds have germinated. In confirmation of this, one of our best gardeners, Mr. R. Fish, writes as follows:—

"Natural-sown seeds come up earlier, and, what is strange, will often, at first, look more healthy than plants from seed sown carefully by the hand. This is owing to the fact, that the seeds scattered from the plant—at least, those of them that grow, are almost certain to be little covered. When we sow seeds early, and cover them as carefully as we can, yet this covering, if the ground is at all loamy, is apt to enclose the seeds in an air-tight covering after heavy rains, and thus germination is impossible. Hence the importance of sowing all seeds in the open air when the ground is dry. The seeds, from the moisture even then in the earth, and the free admission of air, begin to swell at once. If coated with loamy, moist soil, air is excluded, and the seeds either rot, or refuse to vegetate. Seeds thrown from the seed-vessel on the surface of the ground, may, in many cases, be scorched up by the sun; but, in many cases, also, they may just be sufficiently sheltered by the crumblings and the interstices of small lumps of soil, as to be in the best position for germinating, whenever the heat is sufficient for that purpose. Few things feel the first effects of frost more than the tender Purslanes, such as *Portulaca splendens*, *Thellusonii*, *grandiflora*, and their varieties; and yet the self-sown seeds pass the winter apparently uninjured."—(*Cottage Gardener*.)

The self-sown seeds of Mesembryanthemums and Balsams also endure the frosty temperatures of winter unharmed, although the parent plants are proverbially tender.

These facts, and the frequent failure of our Potato crops, led to the very judicious suggestion of planting these crops in autumn, which must be the best time, if practicable, for it is pursuing the dictate of nature. That it is practicable, we have long since proved. Frost in this country, where the soil is a light loam, and its surface level, never freezes, in the severest of our winters, to a greater depth than six or seven inches; and where any cause for fear exists, no frost would injure the sets if a little coal ashes were put over them; for coal ashes are an excellent non-conductor of heat, and, consequently, opposed to the admission of cold, and are, at the same time, a good preservative from excessive moisture.

The fact that the earth, in regions not eternally ice-bound, never is reduced in temperature, at a few inches from the surface, so low as the exterior air in winter, nor is elevated at a similar depth to an equal degree of warmth in summer, suggests the necessity for more attention to the temperature of the soil in our horticultural houses than it has hitherto obtained.

Attention is more awakened to it now than formerly, and by bottom heat our gardeners now intend something more than a mass of fermenting matter for forcing Cucumbers and Pine Apples.—J.

(To be continued.)

NEW BOOKS.

THE ROSE ANNUAL FOR 1858-59.*—In this work, Mr. Paul's object is to record all the doings, not only of the Rose-growers, but of the Roses themselves, during the past year. To produce such a work creditably, it is necessary that a man be enamoured of his subject, and that he have time and opportunity for prosecuting it. Our author possesses all these qualifications, and the way in which he has employed them in the present instance leaves nothing to be desired in "The Rose Annual."

The work commences by a review of the Rose world during the last four years, and this is done by enumerating the new varieties introduced in each of those years, and by a survey of the seasons, and their effect on Rose culture. The latter are so particularly interesting and useful, that we shall quote one of them at length:—

"The bloom of 1854 was an indifferent one. The season had been favourable from winter to the end of April: the young buds had shot forth one or two inches, as if in anticipation of an early summer, and were full of sap, and in their tenderest state, when there came severe frost, followed by sunshine. Apricots as big as Gooseberries tumbled frozen through, and by noon of the succeeding day young Rose shoots were drooping, with leaves withered, as if they had passed through a fire. Then myriads of insects—green-fly, black-fly, caterpillar—swarmed on every bush, and rose-grub and mildew were unusually abundant. Thousands of tender Roses, and even some that are not commonly accounted tender, died quickly, or dragged on a miserable existence, perishing by slow degrees."

In the same graphic style does Mr. Paul survey each year up to 1857, and show the effect each has on the Rose bloom of the season. The observations on 1857 assume a chatty, gossiping, and instructive form, of which the following is an example:—

"*Reine Blanche* is a new pure white Moss Rose, faultless in shape, and of a vigorous habit. It resembles *Madame Hardy*, both in form and colour.

"*Cimabue* is of another race, belonging to the hybrid Bourbon. The flowers are large and full, of a velvety crimson, with a brighter shade in their centres. The colour is particularly rich, and the growth vigorous.

"The group known as hybrid perpetual furnishes us, as usual, with the longest array of names. *Duke of Cambridge* is a large, close, crimson Rose, of good shape: it approaches nearer to *Baronne Hallez* than to any other, but is of a darker hue. The constitution of the plant is unmistakeably good, and the foliage handsome. *Evêque de Nîmes* is, perhaps, the greatest novelty of the season, and unquestionably a gem. The flowers are of the richest crimson, of average size, containing an abundance of petals, which lie closely, the one over the other, in the way of *Paul Dupuy*, and many of the *Gallica* Roses. The foliage is particularly stout and handsome."

* *The Rose Annual for 1858-59.* By William Paul, F.H.S. London : Piper, Stephenson, and Spence, Paternoster Row.

And so on, the author goes through a long array of the novelties of 1857, which are far too numerous for us to notice. We are then introduced to the reports and prize lists of the great Rose shows of the last season. Here we have full lists of all flowers composing the collections, which are exceedingly useful to amateur growers in the selections of kinds wherewith to form a Rosery. Then we have extracts from the author's Rose Journal:—

"*March 8th.*—The Roses in the forcing-houses are now in full bloom. It is pleasant enough to escape the bleak winds of March, when such a charming retreat is accessible as a house of forced Roses. All is rude, bare, and desolate, without ; fresh, brilliant, and fragrant within. One might spend hours pleasantly enough, in noting their varied beauty. The following kinds fully sustain the high reputation they have already acquired as forcing Roses:—"

But our readers should buy the work for themselves, and see what Mr. Paul says. It is not only an useful, but an amusing book; it is illustrated with four admirable portraits of four of the author's favourite Roses; and it cannot fail to commend itself to all lovers of the Rose.

THE ILLUSTRATED BOUQUET, PART V., DECEMBER, 1858.—To picture good nosegays, which would last on the drawing-room table from year to year, was a good idea to begin with; then to make these nosegays registers on quarter-days,—to number, chronicle, and recommend all the best births amongst nosegay flowers, and the best selections which sound, practical skill could point out in all the fashionable circles of flowers, as their turn came round, was a still better resolve; and the best hit of the three combined was to give the best bargain that could be had for the money in the splendidly-coloured nosegays themselves. It was also very fortunate not to have touched one of the grey hairs of botanical ideas—those hairs on end, which frightened the ladies from all "illustrations" and emanations of the body botanical.

This fifth part begins with plate 21, which occupies two full pages in representing the grandest Rhododendron that we have heard of. This is *Rhododendron Nuttalli*, from Bhotan, towards the extreme eastern limits of the Himalayan range, with flowers as large as the largest Lily, pure white, and coming in large clusters. The plant is robust, and the leaves are a foot long. It bloomed for the first time in Germany, so we are beaten by the Germans at last. All the best of these races of Rhododendrons, and all about them, are now registered in this beautiful work.

Plate 22 is the identical plant we have been all running after this last autumn—*Tritoma uvaria*; and this lift for it in the "Illustrated Nosegay" shows how very gay it must be, and how desirable it is to have it as cheap as possible, in order that every man, woman, and child, in the kingdom may see it alive, fresh, and gay.

Plate 23 represents four kinds of Continental crossed Chinese Azaleas—two plain and two variegated. The plain ones put us in mind of some splendid seedlings of *Hibiscus rosa-Sinensis*. Another, of a beautiful Picotee on a white ground; and the other is a florist-shaped, large, white, "with an elegant starry, light rose central star, and radiating lines of rich carmine spots on the upper segments." A biographical sketch of the heads of the principal sections and generations of Azaleas, and a selection of upwards of thirty of the most esteemed kinds of this generation, are given under this plate.

The last plate is devoted to a little-known plant—the most deliciously sweet *Gardenia radicans major*; and to a new *Torenia*, which is as superior to *Asiatica* as that is to *concolor*, but just in the style of *Asiatica*. It is an extremely pretty thing; but part of the description of the colour is much more extremely curious—"A large central white blotch, the brilliancy of which is intensified by its contiguity to the rich, deep purple." That is certainly a new thing, at any rate.

VEGETABLE CULTURE AND COOKERY.

(Continued from page 203.)

CUCUMBER.

I do not intend to treat of the various modes that have been recommended and adopted for the cultivation of Cucumbers a yard long. I never had any ambition to grow a Cucumber of greater length than could be conveniently consumed on its first

appearance at table ; and, therefore, the instructions I intend to give on the subject are meant to be more for useful than for marvellous results ; and without the costly expenditure which must be incurred, if the directions of the fanciful Cucumber growers are followed. It is enough that I furnish plain instructions for growing Cucumbers of reasonable and usable dimensions, at the smallest expense and trouble.

First, then, we shall consider the cultivation *in garden frames* ; and second, the mode of raising them in the open air. Of the varieties best adapted for frame culture, the *Sion House, Manchester Prize, Victory of Suffolk, Man of Kent, and Cuthill's Black Spine*, are as good as any, and may be had of any respectable seedsman ; but there are numerous other varieties, each having their patrons and advocates. As a general rule, the seeds should be sown at least three weeks before the bed will be ready to receive them. Those who have not convenience for doing this, may save time by procuring plants from a neighbour, or professional gardener, or be indebted to a friend for raising the seed for them ; but, failing either of these resources, seed may be raised as follows :—

Early in January, procure three or four barrow-loads of hot dung, and form it into a small bed ; then cover the surface with three inches of soil, and on this place a common garden hand-glass. The seed is to be sown in flower-pots ; but, before doing so, plunge it into a basin of cold water, to ascertain which are sound and which are not. Those that are sound will sink to the bottom, while those that are not will float on the surface. Take of those which are supposed to be sound, three, four, or six, according to the size of the pot, and sow them in a mixture of sandy loam, leaf mould, and rotten dung, covering them with about half an inch of the soil. The pot, or pots, are then to be placed under the handglass, on the hotbed, and in three or four days the seeds will have vegetated. Care must now be taken to prevent the plants from being too much drawn, by tilting the glass an inch or two, to allow the steam to pass off, and fresh air to be admitted ; but if the weather is cold, the aperture should be covered with a piece of an old mat. When the plants have fully developed their seed-leaves, prick them out into four-inch pots, filled with warm soil, inserting three in each pot, equi-distant, near the edge ; and give them a little water, which has been previously warmed to the same temperature as the bed. Replace the pots under the handglasses, which should be kept close for a day and a night ; but afterwards admit air occasionally, and see that they are closely covered during the night, with mats, which should always be removed early next morning. When the soil becomes dry, give a little tepid water to the roots, but on no account over the plants themselves. When the plants have developed two rough leaves, pinch off the top of the leading shoot : this is called "stopping." They will now acquire strength, and begin shortly to branch out with two shoots ; and, if the fruiting-bed is ready to receive them, they may now be ridged out.

The hotbed wherein the plants are to produce fruit being properly prepared, make a hillock of mould under the centre of each light, ten inches high, with a hole in the middle, six inches deep ; and in these holes the plants are to be inserted, after being removed from the seed-pots. To shift the plants with the roots in a solid mass, without breaking the ball of earth, the left hand should be placed flat on the surface of the pot, with the fingers between the plants. The pot is then to be inverted, and, by gently tapping it on the edge of the frame, the ball of earth will fall into the hand. When planted on the hillocks, the soil is to be drawn up, and pressed gently down round the plants, after which they should receive a little tepid water, to settle and establish them. In ten or twelve days after the planting, the first flowers will be produced, and, if the plants are healthy and vigorous, they will produce runners, which should be stopped at every joint above the flower. As the vines gain strength, and are extended, they should be trained at regular distances from each other, and pegged down over the bed, and all weak and ill-placed shoots removed. When the roots begin to appear through the hillocks, let warm mould be added, until, by degrees, the whole of the bed is raised to an equal level. All the attention the plants now require, will be water when they need it, and air on fine days. If the heat should be very strong, the lights may be left open an inch during nights ; and if the weather is cold, the frames should be covered with mats, or some such material.

Cucumbers are also grown *on ridges* in the open air, under the protection of handglasses. These form a succession to those which have been produced in the hotbed ; and also afford a sufficient supply for those who have not the convenience, or oppor-

tunity, for raising them in a frame. The mode of procedure is, in this case, to raise the seedlings on heat at the end of March, and at the end of April to prepare a trench in an open and warm situation, at least a foot deep, and three feet and a half wide. This is to be filled with hot dung, which has been prepared in the same way as for a hotbed, to the height of eight or ten inches above the level of the ground. The earthing on the surface should be about eight or ten inches thick ; and, when warmed through, the plants should be ridged out and covered with a handglass, the empty pots being reserved for tilting the glasses when air is necessary. After the plants have been ridged out, they should be kept close for a day and a night ; and in fine weather air may be admitted. If the sun should be powerful, the glasses are to be shaded with a mat, or some such covering. If the season is very wet at the time of planting, the ridges are to be protected. The best time for ridging out, is from the middle to the end of April ; and the sort generally adopted for the purpose, is a good stock of *Long prickly*, or, as it is sometimes called, *Ridge Cucumber*.

In the southern parts of our island, there are many acres of Cucumbers cultivated as an open field crop, particularly in Bedfordshire and some parts of Essex. For this crop, the ground should be well prepared, by digging and pulverising thoroughly. The seed is sown thinly in the first week of May, in shallow drills, which are four feet apart, and about an inch deep ; and when the plants have made two rough leaves, they are thinned to ten or twelve inches apart. Their after-culture consists in keeping them clear from weeds, and training the shoots on either side of the rows. If the weather is very hot and dry, the neck of the plants may receive a covering of long haulm, to keep them from being scorched, and the earth from being parched.—ROGER ASHPOLE.

(To be continued.)

TRADE LISTS RECEIVED.

Spring Catalogue of a Choice Collection of Floricultural, Vegetable, and Agricultural Seeds, by James Carter and Co., 238, High Holborn, London.—This is a very modest title for a work which is almost encyclopædic in its usefulness. Prepared with a botanical knowledge and correctness, such as we rarely meet with in trade catalogues, and furnished, as it is, with such a mass of horticultural information, we cannot but regard it as a literary and practically useful production of no ordinary merit.

A Descriptive Catalogue of Fruits, cultivated and sold by Thomas Rivers, Sawbridgeworth, Herts, 1858.—This is a very complete catalogue of choice fruits, and is not a mere enumeration of the varieties, but is filled with many useful remarks and much valuable information, of great service to the cultivator of fruits.

A Priced Catalogue of New and Genuine Seeds, for the Year 1859, sold by Milne, Arnott, and Co., Vauxhall.—This is a selection of kinds worthy of cultivation, rather than a collection for curiosity. These gentlemen seem to exercise considerable judgment in their choice of the articles they recommend to their customers, if we are to judge from the catalogue before us.

Catalogues Nos. II. and III. of Bass and Brown, Sudbury, for 1859.—The former contains Azaleas, Geraniums, Cinerarias, and stove and greenhouse plants ; and the latter vegetable and flower seeds. Both are interspersed with numerous notes and observations, that cannot fail to be very serviceable to purchasers.

A Catalogue of Fruit Trees; a Catalogue of Seeds; and a Catalogue of American Plants, Ornamental Trees and Shrubs, &c., sold by Robert M. Stark, Edinburgh.—The former of these contains a good selection of fruits, each variety being accompanied with useful remarks, arranged in a tabular form.

A Mixed Catalogue of a Selection of Trees, Shrubs, and Plants, by John Grier, Waterhead Nursery, Ambleside, Westmorland, is well got up, and interspersed with numerous notes, furnishing useful information. The catalogue is well and carefully prepared, but is not free from the glaring blunders in botanical orthography, too frequent in nursery catalogues ; what mistakes do occur, however, are evidently errors of the press, or oversight, and not of ignorance.

TO CORRESPONDENTS.

VARIOUS CORRESPONDENTS (*H. H. O. H., Ibele, F. P. M., &c.*) will find answers to their queries in a communication from Mr. Fish.

*YOUNG DWARF PEAR AND APPLE-TREE PRUNING (*Pomme et Poire*).*—Shorten all the last year's shoots, cutting off from the strongest one-third of their length, and of the weakest one-half. In the summer, about

August, all the young shoots, except the leading one, should have one inch of their top pinched off. Repeat all this treatment annually.

FLOWERS OF SULPHUR (M. P.).—You are quite incorrect in your well-meant correction. "Flowers of sulphur" is the old chemical name. In the chemical nomenclature of our forefathers, the light powder obtained by converting a solid body by heat into a vapour, and cooling that vapour, was called "flowers." Thus, there were "flowers of benzoin," "flowers of antimony," &c. The Calendar you speak of we have already promised to furnish. It will begin in April.

WILD ROSE STOCKS (G. L.).—You must bud on the young wood; and, therefore, you must leave the branches on the stocks.

ACHIMENES (Rose).—Some nurserymen are obliged to keep a few of all these roots; but the demand for them is so limited, that they make no return for their keep. Every plant which does not pay must either go out of the trade, or be sold dearer than its real value. *Tritonia aurea* will in a few seasons be plentiful enough, and within the reach of all. Before Achimenes can be cheap, there must be a great demand for them.

IRON HOTBED FRAMES (J. K. H.).—We would never have a single iron frame for Cucumber and Melon beds, or pits, if we could get wooden ones. Any cast-iron merchant will supply you easily enough; but first, they are heavier to move; the rocking in moving them is apt to jar and break the glass more than wood; they will be hotter in warm weather, and colder in cold weather than the wood; and they will entail more expense in painting, &c., in keeping them free from rust outside, and free from rusty droppings inside; these are only some of the disadvantages.

GLASS FOR A STOVE (W. W. B.).—Decidedly use Hartley's patent glass for your roof. If you have front glass, and wish to see through it, use crown glass for that. The rough glass for the roof will give you enough of light in winter under ordinary circumstances, and will save you from much annoyance otherwise in effecting shading in summer.

VEGETABLES BETWEEN WALL TREES (C. P.).—Many men, many minds. A few such things as Lettuces may be placed at the foot of the wall in winter and spring. Three or four feet from that the borders may be cropped with anything that does not grow tall in winter and spring. It is more important that such borders should be empty in autumn than at any other time, in order that the trees against the wall, to ripen their wood, may get the full benefit of the heat reflected from the border. Of course, things should be grown that require no deep digging.

SAUNDERS ON THE VINE (A Young Gardener).—It is published by Reeve, Henrietta Street, Covent Garden; price low.

NAMES OF FRUIT (W. H. H., Littledean).—Pear No. 1. *Easter Beurre*. 2. Unknown; seems as if it never would ripen. Apple, *Court of Wicke*. (*A Constant Subscriber*).—Of your Pears, the largest is not known—it is like *Flemish Beauty*; the middle-sized is *Winter Nelis*; and the smallest is a small *Passe Colmar*.

NAMES OF PLANTS (D. G.).—Specimens too imperfect to be certain. But we think No. 1, is *Statice mucronata*. 2. *Callitricha aquatica* (?). 3. *Hypericum piliferum* (?). (*Clericus*).—No. 1. *Leontis leonurus*. 2. *Justicia picta* (crimson). 4. *Tropaeolum Lobbianum* (?). 3. Is a single leaf. How can we tell from this! We might almost as reasonably be expected to tell whether a cow was a Hereford from one of her hairs. A leaf must be very extraordinary to proclaim its parentage.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. *Secs. R. Teebay, and H. Oakey.*

FEBRUARY 9th and 10th, 1859. ULVERSTONE. *See., Thos. Robinson.*

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. *See., J. Butler.*

MAY 25th and 26th. BEVERLEY. *See., Francis Calvert, Surgeon, &c.*

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. *Director, S. Fitman, Esq.*

N.B.—Secretaries will oblige us by sending early copies of their lists.

DISCURSIVE POULTRY PAPERS.

DID any of our readers ever notice the beautiful, active, little dogs, carried, or led, by strange looking men, half grooms, half keepers, in the Quadrant. Smart, clean, active, little animals. When put on the ground, to show to the old lady who has stopped her carriage to look at them, they jump and frisk about. None of our readers ever visited a rat-pit in the "Dials," where a dog not much larger than the rats themselves, kills them against time. If they had, they would see condition the result of moderate and judicious feeding. Now, the old lady we have just mentioned bought one of these beautiful little dogs, which soon after might be seen, on the front seat of the same carriage, a fat, sleepy, wheezy, ungainly mass of flesh. Poor little thing! it has been "taken care of," and has been "kindly treated."

"Lucky for it," says the old lady, "it is always ill, and it would have died if that man had kept it. He starved it!" Look! Miss Jenkins, "It will not eat a piece of the white meat of the chicken, without butter. Its appetite is so bad; and when it came, I was afraid to feed it; it used to jump so at the food, I thought it would bite me. It has a nice little bed, and, in the winter, nice thick blankets; but it is very poorly, and takes no notice of anything."

The truth is, pets of all kinds (we are afraid we may sometimes class children with them) are "killed with kindness."

A London family takes a house in the country. Most people prefer that which they have not, and as, in London, there were no fowls to feed and look after, that was one of the anticipated pleasures. Some must be bought, and there is a large farmer in the neighbourhood greatly renowned for his poultry. Our friends are hardly settled,—half the things are not unpacked,—when a morning is devoted to a walk, or ride, to ask him to be good enough to let them have a set. "What a beautiful sight the yard presented! What plumage! What ruddy combs and gills! But could they not see them nearer?"—"Oh, yes."

The appearance of a basket, and a few grains scattered about, brought them all up, and then the questions,—"How often do you feed?" "When do they roost?" "What makes them so hungry?"

The pen was purchased. "Ah!" said the young ladies, as they rode home; "the fowls have made a good exchange. We will take more care of them than that."

Well, the fowls came home, and were put into the house where they are to roost, with plenty of food. There was plenty—enough for a week. They are let out in the morning, and will not eat the barley. It is supposed they do not like it. "Try something else: give them some bread." They pick only a few crumbs. "Well, leave it in the ground, and they will feed when hungry." Day after day goes on, and the anticipated pleasure is not realised. The fowls are dull, careless of food, are fed twice as well as theyever were, and only get worse.

A friend suggests, that a trough shall be provided where they can feed when they like. It is done, and it stands in the yard full of barley. The birds go to it sometimes, take a mouthful or two, and then run to the water, where they drink greedily.

The birds are evidently going back, and it is necessary to call a council, and hold a consultation as to what shall be done with the tiresome fowls. The only member of the establishment who is an authority, is an odd man—half gardener, half servant, who lived with the former owner of the house. He is consulted:

"Did his former master keep fowls?"—"Yes." "What breed?"—"Don't know, he was not particular." "Were they ever ill?"—"Never." "Did he take much care of them?"—"No, none." "Did he feed them much?"—"No." "Did they lay then?"—"Oh, yes! well." "Did he know anyone who understood fowls?"—"Yes, Mr. Taplin."

Mr. Taplin is one of a very useful class. An active, well-informed country gentleman, of small fortune. He possesses a knowledge of gardening; he is a good judge of a horse or a dog; and an authority on pigs, poultry, and cows. He has good taste in laying out a garden. He has good taste in another way—he does not intrude all these subjects when in the society of ladies, but waits till his opinion is asked. He is an indispensable man to a London family settling in the country, and just now is talking to the head of the family in the kitchen garden. His advice is asked. There is a quiet, humorous smile, or curl, about his mouth, while he draws from his young querist the history of all she has done for her new pets; and when she winds up by saying, "It is so provoking, that the birds looked so well when they were neglected, and now fell off when they were well attended to," he heartily, but not rudely laughed. Seeing some little dismay and chagrin on the young lady's countenance, he apologised for doing so, and saying her father was coming over to see his kitchen garden, he invited her to see his poultry.

Everything was correct about his place. Most beautiful Dorkings were running in the yard. Cochins were in a pen looking into a small orchard. Sebright Bantams were in another. All were in startling condition. The young lady sighed as she mentally compared these birds with her own. These were so bright, so healthy, and so hungry. Had they been her own, she would have been delighted to see them all rush after a few grains that were thrown down. Having found it was feeding-time, she waited to see in what way it would be done. Mr. Taplin was provided with a small tub of slaked meal. "Was that all he was going to give to thirty fowls?"—"Yes; and they would not have all of it." He took a small piece in his hand, and threw it down, not at his feet, but a long way from him. Such a running and scrambling for the morsels as the little lump broke and scattered about. When all was eaten, then another lot was thrown down. There was the same struggle for it. But after a few more, the anxiety had ceased, and they pecked leisurely. No more was given. "Surely," said the young lady, "that is not enough."—"Plenty," was the answer. "If they want more, they must find it."

True enough: they were now seen dividing into little parties, and seeking—some the shrubbery, others the orchard; but all seemed satisfied. “But the poor birds in the pens, surely they had more?”—“No; only as much as they will run after.”—“Yet how well they looked.”—“And where do these beautiful birds roost?”—“Come and see.”

In a corner of the yard is an old wood-house. It is boarded, and the boards are cracked and open in places. It is very lofty, and well thatched. The floor of this house is covered with bright red gravel; the under layer is also gravel, well trodden and rammed down. The surface is scrupulously clean: The perches are only two feet from the ground, and are moveable, for convenience of cleaning out. It does not look smart enough for our young friend: she looks at it contemptuously, and peers about for something she cannot find.—“What is it?”—“Where is their food?”—“What food?”—“For them, before they are let out.”—“They have none.”

LIVERPOOL POULTRY SHOW.

THE sixth annual Poultry Show. Years follow, but do not resemble each other, and at this Exhibition we have always something new to record. Last year, it was the inauguration of a new class for 100 Game Cocks. Now, we had the experiment of self-supporting classes. There were various opinions; but our mind is fully made up, that they must be adopted at many places. We do not understand some exhibitors, who did not send because they would only have their money back. Nothing could be more liberal than the instructions to the Judges, that in these classes, wherever there were more than four entries, two prizes would be awarded. If less than four, one prize. We think, in many classes, the opportunity afforded by this Society is a valuable one for amateurs to test the merits of their birds. The amount of the prizes will depend on themselves; but if all hold back because each believes only himself will show, or because a large prize is not offered irrespective of entries, it stands to reason such a course will be fatal to the interests of the birds he keeps, and, therefore, open a field to others. The following was the result of the experiment:—Malays, 4; Andalusians, 2; White Dorkings, 3; Brahma Pootras, 5; Polands, 9; Black Hamburgs, 3. We do not take these as a fair specimen of what will be accomplished in another year: we have no doubt the entries will be more numerous, as they should in justice be to an arrangement as liberal as that of the Liverpool Committee. An evidence that it affords a good opportunity for competition, is, that it formed a class for Black Hamburgs: we think it is almost the first on record. Any amateurs may, by sending four or five pens, form a class of their own for any breed they admire, and have their merits publicly tested and settled. They will also have the satisfaction of helping to settle these pleasant meetings on a firm basis, which, while it gives every satisfaction to exhibitors, will enable Committee-men to make such arrangements as shall prevent them from being pecuniary sufferers by their efforts to forward a pursuit of which they are fond. We hope, in the long time that will now elapse before Shows will come again upon us, these things will be well considered by all parties, especially by exhibitors. The exertions made by Committees, here as elsewhere, deserve and demand a return from amateurs and exhibitors which should be a testimony that breeders and exhibitors are not unmindful of liberal and self-denying exertions.

We are compelled to defer our mention of the separate classes till next week. If we had attempted it now, it must of necessity have been hurried; and the meeting of the “great ones” deserves something more than that.

We would not, however, lose any opportunity of thanking this most liberal Committee for their arrangements, and their unvarying kindness and attention. Messrs. W. and H. Worrall, Moss, Hindson, Stretch, Lafone, and last, not least, Mr. Musgrave, were indefatigable. We are sure we are only the organs of all our readers, when we say, the poultry world gladly acknowledges its obligations to them.

SPANISH.—Cup, G. Botham, Wexham Court. Second, Mrs. J. C. Hall, Surrey House, Sheffield. Third, Miss M. L. Rake, Brandon Hill.

DORKING (Coloured).—Cup, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescot. Second, J. Robinson, Vale House, near Garstang.

DORKING (Silver Grey).—Third, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Commended, G. W. Moss, The Beach, Aigburth, Liverpool.

COCHIN-CHINA (Cinnamon and Buff).—Cup, H. Tomlinson, Balsall Heath Road, Birmingham. Second and Third, R. E. Ashton, Limefield, Bury. Highly Commended, J. K. Fowler, Frebendal Farm, Aylesbury; H.

James, Walsall; T. Stretch, Marsh Lane, Bootle, Liverpool; D. S. Moore, Teddesley House, Walsall.

COCHIN-CHINA (Grouse and Partridge).—Cup, J. Hindson, Barton House, Everton. Second, P. Cartwright, Oswestry. Third, T. Stretch. Highly Commended, P. Cartwright; J. Cattell, Moseley Wake Green, near Birmingham; D. S. Moore.

COCHIN-CHINA (Any other variety).—First, W. Coppie, Eccleston, Prescot. Second, R. Chase, Mosley Road, Birmingham.

HAMBURGH (Golden-pencilled).—Cup, W. C. Worrall, Rice House, near Liverpool. Second, Messrs. Carter and Gaultier, Poulton-le-Fylde. Third, Rev. T. L. Fellowes, Beighton Rectory, Acre. Highly Commended, W. Bankes, Weston House, Runcorn; J. Lowe, Whitmore House, near Birmingham; J. Martin, Mildenhall Mill, near Worcester.

HAMBURGH (Silver-pencilled).—Cup and Second, E. Archer, Malvern. Third, A. Sutherland, Burnley. Highly Commended, E. Archer. Commended, Rev. T. L. Fellowes.

HAMBURGH (Golden-spangled).—Cup and Second, W. Bankes. Third, W. W. Ruttlidge, Storthend, near Kendal. Commended, Rev. T. L. Fellowes; Messrs. Haigh and Hartley, Tip Hill Bank, Holmfirth, Yorkshire; W. C. Worrall.

HAMBURGH (Silver-spangled).—Cup, R. Teebay, Fulwood, near Preston, Lancashire. Second, Rev. T. L. Fellowes. Third, W. Pierce, Hartford, Northwich, Cheshire. Highly Commended, A. Sutherland.

GAME (Black-breasted and other Reds).—Cup, Capt. W. W. Hornby, R.N. Second, G. W. Moss. Third, R. L. Arnold, Easen Hall, Rugby. Highly Commended, R. L. Arnold; J. Hindson; G. W. Moss; T. Robinson, The Gill, Ulverstone; Lord Sefton, Croxteth Hall; S. Sharman, Great Crosby, Liverpool; H. Worrall, Spring Grove, West Derby; W. Wright, West Bank, Widnes, Warrington.

GAME (Duckwings, and other Greys).—Cup, J. Hindson. Second, G. W. Moss. Third, J. Wright, Hulland Hall, Ashbourne. Highly Commended, S. Sharman; C. R. Titterton, Birmingham; J. Wright.

GAME (Whites and Piles).—Cup, Messrs. Haigh and Hartley. Second, G. Robinson, Thorp Hall, near Worksop. Third, W. Derbyshire, Half Way House, Cabbage Hall. Highly Commended, J. Camm, Farnsfield, Southwell. Commended, T. H. D. Bayly, Ickwell House, near Biggleswade, Bedfordshire; C. R. Titterton.

BANTAMS (Game).—First, G. W. Moss. Second, R. E. Ashton, Limefield, Bury. Highly Commended, T. H. D. Bayly; J. Camm; G. W. Moss; N. M. de Rothschild, Gunnersbury Park, Acton, Middlesex.

BANTAMS (Gold-laced).—Cup, C. Punchard, Blunt's Hall, Haverhill, Suffolk. Second, T. H. D. Bayly.

BANTAMS (Silver-laced).—First, J. Bellyeald, Hyson Green, Nottingham. Second, T. H. D. Bayly.

BANTAMS (Blacks and Whites).—First, C. R. Titterton. Second, J. Percival, Client Villa, Harborne, near Birmingham. Commended, J. Bellyeald; W. D. Henshall, Woodland Mount, Huddersfield.

DUCKS (Rouen).—Cup, E. Worrall, Knotty Ash House, Liverpool. Second, J. K. Fowler. Highly Commended, W. C. Worrall.

DUCKS (Aylesbury).—Cup, Miss M. Seamons, Hartwell, Aylesbury. Second, J. Abbot, Kendal. Highly Commended, J. Price, Londonderry, Bedale, Yorkshire. Commended, R. de Lambert, Commonhead, near Kendal.

DUCKS (Any other breed).—First, T. H. D. Bayly. Second, F. W. Earle, Edenhurst, Prescot.

MALAYS.—Prize, C. Ballance, Taunton, Somerset.

ANDALUSIANS.—Prize, Miss Robinson, Mansfield, Woodhouse, Notts.

DORKINGS (White).—Prize, J. Robinson.

BRAHMA POOTRAS.—First, J. K. Fowler. Second, R. Teebay.

POLANDS (Golden-spangled).—Prize, J. Dixon, Bradford.

POLANDS (Silver-spangled).—Prize, Lieut.-Col. T. Clowes, Froxmer Court, Worcester.

POLANDS (Black, with White Crests).—Prize, J. Dixon. Highly Commended, A. Sutherland.

POLANDS (Buff and White).—Prize, J. Dixon.

HAMBURGH (Black).—Prize, W. D. Henshall.

BEST CROSS-BRED FOWLS.—Prize, E. Archer.

SINGLE COCKS.

SPANISH.—First, S. H. Hyde, Ashton-under-Lyne. Second, Miss M. L. Rake. Highly Commended, Mrs. J. C. Hall.

DORKING (Coloured).—Prize, R. V. Kearney, Barn Lodge.

DORKING (Silver Grey).—Prize, J. Robinson.

COCHIN-CHINA (Cinnamon and Buff).—First, R. Chase, Mosley Road, Birmingham. Second, T. Stretch. Highly Commended, T. Stretch.

COCHIN-CHINA (Grouse and Partridge).—Prize, T. Stretch.

HAMBURGH (Golden-pencilled).—Prize, W. C. Worrall.

HAMBURGH (Silver-pencilled).—Prize, E. Archer.

HAMBURGH (Golden-spangled).—First, W. C. Worrall. Second, Messrs. Haigh and Hartley.

HAMBURGH (Silver-spangled).—Prize, J. Dixon.

POLAND (Silver-spangled).—Prize, J. Dixon.

POLAND (Black, with White Crests).—Prize, G. Ray, Ivy Cottage, Mincetead, Lyndhurst, Hants.

BANTAMS (Game).—First, E. Stansfield, Manor Street, Bradford, Yorkshire. Second, Mrs. W. C. Worrall. Highly Commended, G. W. Moss. E. Stansfield.

ONE HUNDRED GAME COCKS.

First (£40), P. Mostyn, Talacre. Second (£20), G. W. Moss. Third (£15), H. Worrall, Spring Grove, West Derby. Fourth (£10), G. W. Moss. Fifth, T. Burgess, jun., Whitchurch. Highly Commended, J. Bellyeald; R. S. Arnold, Easen Hall, Rugby; Capt. W. W. Hornby, R.N.; G. W. Moss; T. Statter, Stand Hall, Pilkington, near Manchester; H. Worrall; E. Worrall; A. Sutherland; E. Nichols, Hamley House, Rugeley; Hon. W. W. Vernon; W. Cox, Brailsford Hall, Derby; Rev.

T. L. Fellowes; F. Worrall; T. Rigby, Manchester Road, Southport; J. Hindson; W. Wright; E. H. France, Ham Hill, Powick, near Worcester; J. M. Baker, Atherstone. Commended, E. Archer; J. Hindson; Hon. W. W. Vernon; E. Lowe, Comberford Mill, near Tamworth; H. Shield, Northampton; G. W. Moss.

A CERTAIN CURE FOR ROUP.

THE following remedy has been tested by two or three amateurs during the last three years, without a single instance of failure. For that reason I beg to submit it to your public columns, as the cheapest and best remedy for that plague of our poultry-yards, roup.—H. C.

"Place your birds in a warm place, well ventilated, and dry. Wash their heads and nostrils every day with warm milk and water. Feed on soft food. Take of best twist tobacco one ounce: divide it into thirty-two pieces. Each piece will be about three inches long. Obtain a small tin canister, to place the tobacco in; add stale sufficient to cover it; put the lid on, and let it simmer on the hob for an hour or more.

"Dose.—One piece every night till the bird is well."

CHESTERFIELD POULTRY SHOW.

THIS Show was held on the 18th, 19th, and 20th inst. The following were the awards:—

SPANISH.—First, W. Silvester, Market Hall, Sheffield. Second, W. Dawson, Hopton Mirfield, Yorkshire. Commended, W. Silvester. *Chickens of 1858.*—First, W. Haryey, Sheffield. Second, W. Dawson.

DORKING.—First and Second, C. Laughton, Sutton Chesterfield. *Chickens of 1858.*—First, H. Ilmsworth, Lupset Hall, Wakefield. Second, C. Laughton.

COCHIN-CHINA.—First, H. James, Walsall. Second, C. Felton, Erdington, Birmingham. *Chickens of 1858.*—First and Second, J. Staley, North Colliingham.

GAME (Black-breasted and other Reds).—First, J. Jackson, Rotherham. Second, W. Coupe, Langwith, Mansfield. *Chickens of 1858.*—First, G. Booth, Chesterfield. Second, W. Coupe. Commended, J. Jackson, Firbeck, Whitwell.

GAME (Duckwings, and other Greys and Blues).—First, C. Laughton, Second, R. White, Dronfield Hill Top. Highly Commended, G. Hellowell, Walkley, Sheffield. *Chickens of 1858.*—First, A. Sutherland, Burnley. Second, J. Hoyland, Chesterfield.

GAME (Whites and Piles).—First, J. Wilcockson, Chesterfield. Second, J. Jackson, Rotherham. *Chickens of 1858.*—First, J. Poole, Chesterfield. Second, J. Camm, Farnsfield, Southwell.

HAMBURGH (Gold-pencilled).—First, Miss E. A. Crawford, Nalam, Southwell. Second, R. Hawksley, jun., Southwell. *Chickens of 1858.*—First, C. Hayes, Walkley, Sheffield. Second, Miss E. A. Crawford.

HAMBURGH (Gold-spangled).—First, E. Needham, Ridgeway. Second, J. Knowles, Herne House, Chesterfield. *Chickens of 1858.*—First, E. Needham. Second, W. Davenport, Chesterfield.

HAMBURGH (Silver-pencilled).—Second, L. Jackson, Farnsfield, Notts. *Chickens of 1858.*—First, J. P. Jones, Handsworth, Sheffield. Second, G. Daft, Halloughton, Southwell.

HAMBURGH (Silver-spangled).—First, G. Daft. Second, Mrs. J. Bausor, Southwell. *Chickens of 1858.*—First, Messrs. Bird and Beldon, Eccleshill Moor, Bradford. Second, W. H. Malpas, Nottingham.

POLAND.—First, Messrs. Bird and Beldon. Second, C. Felton. *Chickens of 1858.*—Prize, Messrs. Bird and Beldon.

RED CAPS.—First, J. Hollins, Sheffield. Second, G. Marshall, Chesterfield. *Chickens of 1858.*—First, J. Woollen, Sheffield. Second, B. Oates, Sheffield.

BARN-DOOR FOWLS.—First, T. Dodds, Halifax. Second, J. Newton, Chesterfield.

GAME COCK.—First, W. Coupe. Second, J. Jackson, Whitwell. Third, J. Camm, Southwell. Highly Commended, A. Sutherland; T. Neal, Chesterfield; J. Millington, Chesterfield.

BANTAMS (Gold and Silver-laced).—First, A. Elliott, Hyson Green, Nottingham (Silver). Second, Mrs. J. Blackburn, Preston (Gold).

BANTAMS (Black).—First, G. Daft. Second, W. H. Malpas. Highly Commended, J. Charlesworth, Chesterfield.

BANTAMS (White).—First, C. Felton. Second, G. Short, Spital, Chesterfield.

BANTAMS (Any other variety).—First, J. Camm. Second, W. Silvester (Game).]

DUCKS (White Aylesbury).—First, J. Camm. Second, Messrs. Furniss, Birchill Farm, Bakewell.

DUCKS (Any other variety).—First and Second, G. Daft.

GEES.—Prize, C. Lowe, Holmesfield, Chesterfield. Prize, G. Daft.

TURKEYS.—First, Messrs. Furniss. Second, C. Laughton (Black Norfolk).

PIGEONS.—*Carriers.*—First, H. Child, jun., Sherbourne Road, Birmingham. Second, C. Black, Chesterfield. *Almond Tumblers.*—Prize, J. Heaton, The Cottage, Staveley, Chesterfield. *Owls.*—First, G. Goore, Aigburth Vale, Liverpool. Second, H. Child, jun. *Jacobins.*—First, H. Child, jun. Second, G. Goore. *Powlers or Croppers.*—First, H. Child, jun. Second, H. Brown, High Street, Sheffield. *Fantails.*—First, H. Child, jun. Second, G. Goore. *Balds, Beards, or Mottled Tumblers.*—First, J. Heaton. Second, H. Child, jun. *Dragons.*—Prize, H. Child, jun. *Any other variety.*—First, H. Child, jun. Second, J. Heaton.

RABBITS.—*For Length of Ears.*—First, E. Holland, Grass Hill, Chesterfield. Second, T. Evinson, Chesterfield. *For best Coloured.*—First, W. Hudson, Chesterfield. Second, C. Statham, Chesterfield. *For Weight.*—First, L. Simpson, Brampton, Chesterfield. Second, T. Evinson.

A Treatise on Pigeons, to the winner of the greatest number of Prizes, to H. Child, jun.

JUDGES.—G. Hatfield, Esq., Doncaster; T. Chaloner, Esq., Whitwell; and J. Wragg, Esq., Sheffield.

THE BRAHMA CONTROVERSY.

HAVING read several statements, from various persons, on the merits and demerits of the so-called Brahma Pootra fowls, I venture to give the public my unbiased opinion upon them. I will first commence by saying, I was once very sceptical on the purity of their race, and very doubtful of their qualities as useful denizens of the poultry yard; but, about three years ago, I paid a visit to Mr. Davies' yard, at Hounslow, and was so struck with their extraordinary size and beauty of marking, that I purchased a sitting of eggs, and reared six chickens from them, and after a careful selection of the best birds I could find, for the last two years, at the various Shows. I think I have now a good reason for forming an opinion on their purity of race. In this particular, I will unhesitatingly state, I have never yet had one chicken partaking of the characteristics of any other breed. I never bred a buff bird; I never bred a five-clawed bird; and I never bred a rose-combed bird; nor a white or black-legged bird; and I do not think I ever bred a smooth-legged bird. Now, as these are external characteristics, it is certainly very remarkable, that, if emanating from a cross, they should never go back to their original types. I will now go to their internal organisation.

First, the crowing. They always have the roaring cry of the Cochins, but less prolonged; no sharp, vigorous chantieering (to coin a word), like the Dorking or Spanish. They always lay dark eggs, like Cochins—never a white one; and they lay earlier and oftener than any other breed known: the egg is also larger. Now, all writers upon poultry say, the colour of the egg, the sitting and laying propensities, and the crowing of the various breeds, are governed by their internal organisation, as also the production of feathers. As this is the case, I think every breeder of Brahmams must, long ere this, have discovered some going back to an original type, had their origin been manufactured by a cross of Dorking, Spanish, Cochinchin (White or Black), or any other variety. That they are a distinct class; that they breed true to colour, comb, and externals; I fearlessly assert, and I defy contradiction.

Now, as to their qualities. I shall not bore your readers with statistics, nor tire myself with writing them; but being a very extensive breeder, and perhaps one of the most successful exhibitors in the kingdom, in all the varieties of Cochins, Spanish, Dorkings, and Brahmams, I may have some authority in speaking of practical results. I say, they are the largest of any known breed, they lay as many eggs as any breed, and they lay earlier; but, above all things, they are so exceedingly hardy, that they almost set cold at defiance, and they roam far away for a living. If I wished to have the best fowls for table, and the best and most profitable for a farmyard, I would have a cross between Brahma cocks and Dorking hens. In conclusion, I think it right, that in this *vexata questio*, all who can throw any light on it, ought at once to do so; and I would recommend "ALPHA" to go to a first-class well-known breeder for some eggs this season; and let him give us his lucubrations on Brahma Pootras next year.

I hope I have not hurt the tender feelings of any great breeder of other fowls, as I have studiously avoided any comparisons: I believe all have their varied and intrinsic merits. But I must be allowed to give a crow for my greatest pets of my very extensive collection of prize birds.—J. K. F., Aylesbury.

OUR LETTER BOX.

ROUP (Spanish Cock).—We cannot say more on the subject. You will see what a very old breeder of poultry says to-day about his treatment of the roup.

CANARIES AFFECTED WITH ASTHMA.—Being a breeder for many years of fancy Canaries, including Belgians, and finding the latter very subject to a disease resembling asthma, by constant panting and frequent coughing, declining many months before death, I would consider it a great boon if any brother fancier could, from experience, suggest a probable remedy. It is the only disease which has baffled my attempt at a cure. When wanted, I shall be very happy to communicate the result of my experience in effectually curing many other diseases Canaries are subject to.—J. R. [Favour us with your address.]

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	FEBRUARY 1—7, 1859.	WEATHER NEAR LONDON IN 1858.					Sun Rises.	Sun Sets.	Moon R.ands.	Moon's Age.	Clock afterSun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.							
1	TU	Acacia urcinata.	29.887—29.824	38—22	W.	—	40 af 7	47 af 4	21 m 7	28	13 51	32	
2	W	PURIFICATION. CANDLEMAS DAY.	29.846—29.735	34—29	E.	—	39 7	48 4	44 7	29	13 59	33	
3	TH	Acacia grandis.	29.839—29.621	51—43	S.W.	.30	38 7	50 4	sets.	20	14 6	34	
4	F	Acacia Drummondii.	29.764—29.509	47—27	S.W.	.28	37 7	52 4	36 af 6	1	14 12	35	
5	S	Azalea exquisita.	29.968—29.947	54—32	S.W.	—	35 7	54 4	48 7	2	14 17	36	
6	SUN	5 SUNDAY AFTER EPIPHANY.	30.031—29.991	48—26	S.E.	—	34 7	55 4	1 9	3	14 21	37	
7	M	Azalea triumphans.	29.993—29.904	45—27	E.	—	32 7	57 4	16 10	4	14 25	38	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 41.4° and 32.1°, respectively. The greatest heat, 57°, occurred on the 3rd, in 1850; and the lowest cold, 4°, on the 2nd, in 1842. During the period 195 days were fine, and on 101 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

CABBAGE.—Sow a little *Early York*, or *Early Hope*, on a warm border, or slope. The old cabbage-ground, which has been under sprouts since August, should be trenched and well manured, and succeeded by crops of *Peas* and *Beans*.

CAULIFLOWERS.—Sow a little in a box, to be placed in a gentle heat. Pot singly, in small pots, the plants that may require thinning out, and that have stood during the winter in cold frames, or under hand-glasses. By such treatment, they will produce an abundance of healthy roots, and can be transplanted to the open ground in due season, without causing a check to their growth.

CUCUMBERS.—As soon as the plants are turned out, thrust a stick into each hill, and examine it frequently: if there is any approach to a burning heat, draw as much soil from the bottom of the hills, next the turf, as you can, without disturbing the plants. Afterwards give the centre of the bed a good watering, which will act as a temporary preventive of burning, until the heat declines. Sow a little more seed, either for a succession crop, or to replace those that are turned out, if an accident should happen to them.

HERBS.—Plant, of all hardy sorts.

ONIONS.—Sow the *White Spanish*, or *Portugal*, in boxes, to be placed in a gentle heat, and afterwards transplanted in well-manured ground. The same sorts may be sown on a warm border, with the probability of the weather being favourable for their germination.

PARSLEY.—Sow.

PEAS and BEANS, that have been sown in boxes, to be hardened by degrees in the cold frames, preparatory to transplanting.

POTATOES.—Continue to plant the early sorts in a sheltered situation. If they have begun to grow, be careful not to break the young shoots, as they are best. Breaking them may be avoided by planting sideways, instead of upright.

REFUSE STUFF.—All prunings of gooseberries, currants, raspberries, and bushes of any kind, and clay, weeds, sawdust, or old tan, can be turned into a valuable manure, by charring, or roasting, them in a heap.

RHUBARB.—When it cannot be taken up and placed in a warm situation, hand-glasses, placed over it, will protect and forward it.

STORED ROOTS.—Examine them, and remove decayed ones.

FRUIT GARDEN.

FRUIT TREES.—Finish planting, pruning, and nailing, precedence being given to the more forward kinds. Fork up the soil when trodden down in doing so, and mulch newly-planted trees.

FLOWER GARDEN.

All alterations should now be carried out without delay. Trench up and renew vacant and exhausted beds.

ANNUALS (HARDY).—Sow the *Californian* sorts, in the open ground, if wanted early.

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AURICULAS.—Sow seed in well-drained pots of light soil, regularly over the surface, taking care to separate the seeds as much as possible. The seed to be gently pressed down—not covered with soil—with the bottom of a small garden-pan, which answers the purpose very well, and water very lightly through a fine rose. The pots should be placed in a cold frame, or under a hand-glass, and shaded from bright sun, with air occasionally in the early part of the day. If properly attended to, the seedlings will be up in five or six weeks.

AZALEAS and RHODODENDRONS.—If it is wished to increase any choice kinds, layer a few branches now, by pegging them down.

CARNATIONS and PICOTEES.—Give plenty of air, and protect them from heavy rains.

HARDY CLIMBERS.—Prune, nail, and tie up.

HALF-HARDY and TENDER ANNUALS.—Sow *Thunbergia*, *Schizanthus*, *Phlox Drummondii*, *Egg Plant*, *Cockscomb*, and other such things, in heat, either in pots, pans, or boxes. The depth of soil as a covering should generally correspond with the diameter of the seed; and from such it may be inferred, that a very slight sprinkling of soil is sufficient. Depth of covering is too frequently the cause of seeds not vegetating.

PINKS.—Stir the surface soil, if hard, and fasten the roots, if loose in the ground.

PITS and FRAMES.—Examine the stock for bedding, and pot off all kinds that are in store pots, if there is heat and a proper place to put them in.

ROSES.—Prune, but omit some, to be done later for late blooming, and apply a mulching of manure, or rich compost.

SHRUBS.—When the lines of plantations beside the walks have assumed a hedge-like form, it is advisable to break into them, and to form bold recesses, where space will admit of it, which will produce the pleasing effects of light, shade, and variety, without intricacy.

TULIPS.—Allow no moisture to lodge on the foliage. Protect them from frost, hail, and cutting winds.

VERBENAS should be planted in a gentle heat, after potting, until they have made fresh roots, and then to be hardened off by degrees. On a sunny afternoon, shut up early: this will accelerate growth, when no artificial means of heating are employed.

WILLIAM KEANE.

VINE BORDERS, &c.

SOME soils are so happily constituted, that Vines will succeed without any particular preparation; but the majority are not so. I remember, about twelve or fifteen years since, going through the extensive forcing establishment of the late Mr. Wilmot, of Isleworth; and, in the course of a long conversation about Vines, he affirmed that they then succeeded much better on the native soil without any preparation, than on made borders, which he at that time entirely repudiated. He showed me a border which had been made at a very considerable expense, and which had proved unsatisfactory, and pointed with exultation to some Vines which had been stuck into the natural

soil, even at the back of the house, and which were thriving exceedingly. To use his own words, he merely knocked out a brick or two, and introduced their stems.

On the other hand, we have been used to descriptions of made borders, composed of manurial matters of the most gross description, and which, if duly economised, would manure acres of land.

Such extreme cases, when we look at their results, at once prove that this is not a mere question of manures; but that, however the Vine, in common with other fruits that love a generous soil, may require manurial applications, there is a question concerning their borders which claims priority of consideration.

I have been long advocating, in the pages of THE COTTAGE GARDENER, as to fruit trees, the absolute necessity of first considering the texture of soils, before we dwell so much on manurial matters; and I am glad to find that, of late, the principle has gained ground. My friend, Mr. Hill, gardener to R. Sneyd, Esq., of Keele Hall, near Newcastle, Staffordshire, has been exceedingly successful in Vine culture, as, doubtless, most persons are fully aware. Perhaps no one in the kingdom has excelled Mr. Hill in his general success, by which I mean the finest and most regular crops of superior Grapes, season after season. When I last saw them, it was, according to an old Scottish saying, "A sight for sair een."

I have written to Mr. Hill, begging him to inform me how his borders were made, and, also, leave to weave it into my present subject; and he has, with the utmost frankness, granted my favour. I intend to use his liberality on this occasion. Before proceeding, let me observe, that Mr. Hill has exhibited, at the great metropolitan exhibitions, thirty dishes of Grapes within the last two years, and has gained thirty prizes, fifteen of which have been *first prizes*. I name this as an apology for making a free use of his opinion. I will at once copy the gist of Mr. Hill's letter, as to Vine borders, &c., and afterwards offer a few comments, where I think them necessary.

"My borders," says Mr. Hill, "are two feet and a half deep at back, one foot and a half at front, and eighteen inches above the ordinary ground level. They are composed of strong loam; old mortar rubbish; charred vegetable refuse, such as prunings, &c.—in fact, all sorts of rough stuff thrown in a heap and charred; a few fresh horse droppings, without the litter; and a little half-inch bone. About the following proportions: — Good turf, six loads; lime rubbish, four loads; charred materials, two loads; horse-droppings, fresh, two loads; half-inch bone, strewed in by hand during the process of filling.

"The borders were made in widths of five feet, each season, until the whole space was filled. The *Hamburg* Vines were planted in December, in a dormant state, and the *Muscats* in June, in a growing state, and it is difficult to tell which of the two succeeded best, as they have proved equally satisfactory."

Thus far, Mr. Hill's own words, as to the borders; but he has some other practical scraps, of value, which I must present in his own words. Thus—

"Our loam being very heavy, or adhesive, we are obliged to put a deal of lime rubbish, and the more of the latter we use the more fibre we get. Some Vine borders, which I removed soon after I came to Keele, were composed of turf and leaf mould entirely. The roots were very poor, and very brittle. The Vines never ripened their wood; in fact, they were almost evergreen. As regards fermenting material outside, I have not so high an opinion as some. Under the border is the place to apply heat. For very early work, the roots ought to be inside; but if outside, cover the surface with two feet of good, dry, tree leaves, early in the autumn, and protect these with felt or wooden shutters. I use no farmyard manure, leaf mould, or Carrion; neither do I make deep borders. I think, however, that, in some of the southern counties a border might be made, three feet in depth; but in this part of the country, where we generally get

a deal of rain, and the soil and subsoil wet and cold, plenty of drainage, and shallow, porous borders, are our best reliance."

Again, as to the *Barbarossa* Grape:—"I think many people condemn this Grape before they give it a fair trial. It is a very strong grower, and for the first two or three seasons shows extraordinary bunches. Many growers leave these big 'shows.' They promise to weigh six or seven pounds. Such seldom colour, and, of course, their flavour is deficient. My advice is, to give it a long season, plenty of heat, and, if the shows are large, to reduce them with the scissars, so as to weigh about 1½ lb. each. They will then have colour and flavour."

Thus far, Mr. Hill, to whom I express my thanks for his candid account. I now beg leave to offer a few remarks on the preceding matters, and I do so with the confidence of not offending Mr. Hill, with whose general ideas I most heartily agree.

In the first place, the simplicity of Mr. Hill's borders must be apparent. And who is there in these days of simplification, that would prefer a border composed of half a score of fanciful materials to one simply of turfy loam, a little ordinary manure, and as much of the opening materials as will ensure porosity for many years? I have before named, in these pages, that, when I was a lad, a venerable old florist told me, with a knowing shrug, that it required forty ingredients to grow an *Auricula* well, at which I grew very inquisitive; but he declared the secret should go to the grave with him, and I now feel thankfully assured that it has. I, myself, have repeatedly urged, by means of the press, during the last twenty years, the absolute necessity of first considering the texture of the soil, and how to render compounded soils porous for many years.

There is little doubt that a turf loam, if of the right texture, on a dry bottom, is complete in itself to grow good Grapes; especially seeing that we can use rich surface dressings and liquid manures occasionally. But not one loam out of a dozen kinds, perhaps, is of that precise texture that a gardener can depend upon, to wear for years, and preserve its porosity. Hence the use of lime rubbish, sand, charred materials, &c., to divide adhesive masses of soil, and to secure porosity.

Thus, we find that there are but three distinct classes of material in most of the best Vine borders—loam (or shall we call it natural soil), porous materials, and manurial matters. Anything beyond these may be employed at the whim or discretion of any person; but whatever they may be, they are not indispensable. My opinion is, that nearly one-half the volume of the compost should be loam, be the rest what it may. As to the charred material, I can only say, that I have been charring regularly for the last dozen years, or more, and have applied it to most things, and find, in all cases, the fibres of plants clinging most tenaciously to it. To plants in pots, I use clean riddled charcoal for almost everything, as drainage, besides mixing it with the compost, and I have found every kind partial to it. Well, then there is the half-inch bone which Mr. Hill recommends. This has been used for years by the best gardeners, and there is nothing proved against its use. And how is it likely there should be, since it adds to porosity, and contains such a fund of manurial virtues, which are given out gradually for years? He who manures soil with unboiled bone, or "sawings," manures it for fifty years: and boiled half-inch bone will wear twenty years, when mixed in the soil. I wonder if any one has tried superphosphate in Vine borders. This would act with rapidity.

With regard to leaf mould, I quite agree with Mr. Hill. It is a poor, inert substance, buried deep in soil. Besides, good dung can furnish all that leaf can, and much more. There are certain cases in which surface dressings of leaf mould have been beneficial, as inducing fibres; but it is a different body, exposed to the sun and winds, from that buried in the soil.

Persons about to make new borders, should take into consideration their durability above all things, and provide against those excessively wet periods that do so much damage. From what we know, and what we have heard, it is very easy to make borders which shall produce astonishing Grapes, whilst the materials are not too much decayed; but they soon decline when a general decomposition of matter takes place.

Now, there is nothing in loam that changes materially, but the mere grass, and its roots; but these are so divided amongst the mass, that, although it be decaying organic matter, there is no bulk of humus, or black residue, in any one portion. It is, doubtless, the introducing such inordinate quantities of organic matter, whether animal or vegetable, that ultimately produces that condition in the borders which old gardeners call "putted"—a condition in which air cannot enter, nor water pass. What remains, under such conditions, but for the originally pampered roots—once like sponges—to go gradually to destruction? How different are surface dressings, the timely application of liquid manure, &c.

R. EBBINGTON.

BRITISH POMOLOGICAL SOCIETY.

(Continued from page 263.)

Of fruit not quite ripe:—DOWNTON NONPAREIL, by Mr. SPIVEY. In fine condition otherwise; large, very juicy, but acid.—BRADDICK'S NONPAREIL, by Mr. M'LAREN, from espalier. Flesh tender, and very juicy, but acid.—COURT OF WICK, under the name of *Old Nonpareil*, by Mr. SMITH, Cheshire, from a standard. Very acid and unpromising, as regards flavour.—A handsome, russety variety, called WELSH APPLE, by MARK SHEPHERD, Esq.—COUET-PENDU PLAT, from Mr. ELLIOTT, Lillishall, dry and acid;—and from Mr. WRIGHT, under its known synonyme (*Garnon's*), very juicy, and promising to be sugary and good.—And a sweet, juicy, oblate, dessert Apple, of some merit, under the name of EASTER PIPPIN, by Mr. SMITH.

Of fruit over-ripe:—KEDDESTON PIPPIN, by Mr. SIMPSON (see report of October 28). Juicy, sweet, but astringent.—FRANKLIN'S GOLDEN PIPPIN, by Mr. STODART (No. 2). Soft and juiceless.

GENERAL DESSERT APPLES.

(EXHIBITED IN SMALL QUANTITIES.)

CORONATION PIPPIN, by Mr. SWINERD. A variety not hitherto described. Oblate, slightly turbinated, somewhat ribbed. Average diameter—transversely, 2, 3-16 inches; longitudinally, 2, 1-16 inches. Pale greenish yellow, slightly striped, scattered over with small round, dark spots; very pale russet round the stalk, which is of medium length, slender, and deeply inserted; depressed at apex; flesh tender, very juicy; flavour brisk sub-acid.

SPRING RIBSTON PIPPIN, or *Baddow Pippin*, by Mr. LANE, of Berkhamstead. This is a very little-known variety, but one deserving of more general growth. Fruit roundish, irregular. Average diameter—transversely 2 $\frac{5}{8}$ inches, longitudinally 2 $\frac{1}{4}$ inches. Rind thick; colour pale green, much clouded by small patches of russet, and spots of darker colour; eye puckered; cavity within calyx deep and hollow; stalk short, thick, inserted deeply; flesh tender, very juicy, sweet, with a slight *Nonpareil* flavour. The specimens exhibited had, unfortunately, been gathered before they were ripe, and were rather shrivelled; but it is generally reported to be an useful, late-keeping variety.

KITCHEN APPLES.

RIPLIN, by Mr. SENDALL, Burningham Hall, Aylsham, Norfolk. Reported to be a great bearer, and was considered likely to be an useful cottager's Apple; medium-sized, green, codlin-shaped. Fruit juicy, tender

flesh (producing, when baked, a soft, pale brown pulp, sub-acid.—SEC.)

COLONEL VAUGHAN'S, or *Lady's Finger*, by Mr. SMITH. An old and very beautiful, striped, wax-like, conical-shaped Apple, very juicy, and, in some districts, a favourite variety for mincemeat and cider. The same variety was sent by JOHN FERME, Esq., of Haddington, to be named.

POMME DE CIRE, by G. WOLSEY, Esq., St. Andrew's. Reported to be much esteemed in the island for dessert or kitchen use. Fruit medium-sized, pale yellow, tender; flesh juicy, and sub-acid, but not calculated for dessert (when baked, producing a delicious, soft, syrupy pulp, having a rich, pleasant flavour, and requiring no sugar.—SEC.)

VIOLET APPLE, by Mr. FERGUSON. A handsome, striped, conical, medium-sized, but soft fruit, said to be very productive and useful (when baked, producing soft and sub-acid, but not syrupy pulp, requiring sugar; probably, most suitable as a sauce Apple.—SEC.).—A very similar Apple, in every respect, saving that it was more solid, and likely to keep longer, was sent by Mr. SWINERD, under the name of *Scarlet Nonpareil*.

SEEDLING APPLES.

Several of these had been partly examined at previous Meetings, and kept to test their qualities as far as possible, that all the information regarding them might be presented collectively.

G. WOLSEY, Esq., of St. Andrews, Guernsey, sent a Seedling, supposed to be a cross between *Golden Pippin* and *Nonpareil*, and was considered to possess considerable merit. Fruit small, oblong, slightly conical; average diameter 2 $\frac{1}{8}$ inches each way; eye puckered, slightly depressed; stalk medium length, stout; skin thin, pale green, yellowish on the sunward side, much flaked, and covered with pale brown russet; texture very tender and juicy; flavour brisk, very sugary, rich, and aromatic. It was hoped that Mr. Wolsey would send it again, with information concerning the age of the tree, &c.

Mr. FERGUSON sent a Seedling Apple, called the *Cottager's Ribston Pippin*. Reported to be a vigorous grower, great bearer, and excellent for puddings, requiring no sugar. Fruit very large and sweet. (Tested by Secretary, and found to be exceedingly sweet and syrupy, when boiled or baked, and whitish coloured, but not breaking down into a nice soft pulp.)

A SEEDLING Apple, from *Old Golden Pippin*, sent by Rev. R. BARNES, of Wantage, Ardington, Bedford, November 9th, was not ripe on its arrival, and was kept over, in hopes of its coming into condition. It, however, shrivelled so much, without ripening, that it appeared to have been gathered too early, and the Society have been unable to pronounce an opinion upon it. If the sender considers it, another year, worthy of examination, the Council will be glad to receive it again; but request that it may not be sent until it is at its best, as fruit suffers considerably by exposure, handling, &c., at several consecutive Meetings; and it may, in consequence, receive less than justice.

These remarks exactly apply, also, to a SEEDLING, sent by Mr. W. CRAW, of Westbury Manor, which, however, was a solid, sugary Apple, promising to be a good late-keeping dessert fruit.

Also to a SEEDLING, sent by HENRY BOOTHBY, Esq., Holme Cottage, reported to be a most prolific bearer, and which was a nice-looking Apple, sweet and tender fleshed, but much like many in cultivation.

And the same remarks especially apply to a SEEDLING, from *Old Dorsetshire Russet*, sent by Mr. JOHN JENNINGS, of Furze Hill Nursery, Shipston-on-Stour. This Apple is still kept, but it would be scarcely fair, at the next Meeting, to condemn it, however deficient it may be, after it has been kept since the 11th November.

Messrs. CHATER, of Haverhill, sent a SEEDLING of a

variety said to keep till March. Fruit not ripe on arrival (November 11), and subsequently appeared to have suffered from keeping, but still pleasant flavoured and tender fleshed. Messrs. Chater are requested to send it again, to next Meeting.

Messrs. YOUELL's (of Yarmouth) Seedling Apples again came before the Meeting; but not any of them were considered, from the present exhibition, worthy of being commended as acquisitions. Several of the most promising varieties, however, had suffered so much from having been gathered in an immature state, that it may be worth while to receive them again in a better condition next year. The kinds referred to were numbered 1, 11, 19, 23, and 33.

A NEW ARRANGEMENT OF SHRUBS.

(Continued from page 249.)

SINCE writing my former paper on this subject, I have visited several places, and, as a matter of course, observed with a critical eye the arrangement of the shrubberies. With a very few exceptions, that arrangement is very unsatisfactory. In one place, at Didsbury, near Manchester, the seat of Joseph Bull, Esq., the shrubs are mostly evergreen; hence, at this time of the year, their deep green foliage gives a relief to the eye, which is very pleasing; but, even here, the mingling system has been adopted at the time when the place was planted. Rhododendrons, however, prevail pretty largely, and, when in flower, must be very handsome.

The natural desire of change and variety seems to be inherent in the human mind, and this desire, or love of change, is, no doubt, implanted in the mind for a wise purpose. In ornamental gardening, it has led to a search after new plants, either from the wilds of nature in foreign countries, or by hybridising such as we already possessed; and not only have we sought for, or raised, new trees, shrubs, and flowers, but a desire has arisen so to plant them, as to combine new ways of placing them in our gardens. From this principle, we have arranged our flowers in masses, known by the cognomen of bedding-out system, and have added to that another, which I named the ribbon style, and which style, I believe, was first adopted by Mr. Fleming, in the gardens of the Duke of Sutherland, at Trentham.

Now, I propose, to all about to plant, or renew, a shrubbery, to arrange a series of shrubs in this ribbon style, or, in other words, to plant them, so that if viewed from a distance, in a long line, they would have the appearance of a striped ribbon. We possess shrubs with dark green foliage, and, also, light green leaves. We have variegated shrubs of every hue, and we possess shrubs with purple leaves. Then, to vary the outline, we can use shrubs with spiry forms, and others that are conical, round, or even drooping shapes. Having all these elements of variety at command, a shrubbery might be planted to be at once novel, varied, and interesting throughout, in which art and design would be as conspicuous as in the most elaborate parterre; and it would have an advantage over that region of flora' beauty—that of being permanent throughout the whole year. Besides that, this arrangement would look beautiful from the day it was formed, and would increase in effect for a great number of years, without any further care, excepting that of keeping it free of weeds, and an annual stirring of the surface in the autumn. I am as certain as a man can be certain of anything, that this new arrangement of shrubs would be highly valued, if it only had a trial; and I should like, of all men in the world, that my friend, Mr. Beaton, would set his brain to work, and carry it out in the Experimental Garden he so often mentions; though I should like to see it carried out, also, in a place where everybody could see it—the grounds of the Crystal Palace, at Sydenham, for instance!

There may, however, be amongst the readers of THE COTTAGE GARDENER, some spirited individuals with sufficient means and taste to try this scheme of mine, though, perhaps, on a small scale. To guide such, I will give a list of such shrubs as I judge will carry out the method to some extent. I suppose this ribbon to be planted with evergreens, or variegated evergreen shrubs. By way of variety, I give two sets of shrubs, each shrub to occupy the square of the distance between each. So the ribbon will be eleven yards two feet and seven inches broad,

and as long as the planter pleases. I propose to use twelve kinds of shrubs as follows:—

1ST ARRANGEMENT.

- | | | | |
|-----------|----|---------------------------|--------------------------|
| 1st row. | 20 | Erica herbacea, <i>a.</i> | 1 foot apart in the row. |
| 2nd row. | 16 | Erica Alportii, <i>a.</i> | 1 foot 3 inches ditto. |
| 3rd row. | 12 | Common Lavender. | 1 foot 8 inches ditto. |
| 4th row. | 8 | Berberis aquifolium. | 2 feet 6 inches ditto. |
| 5th row. | 8 | Dark-leaved Phillyrea. | 2 feet 6 inches ditto. |
| 6th row. | 8 | Gold-striped Hollies. | 2 feet 6 inches ditto. |
| 7th row. | 8 | Cupressus excelsa. | 2 feet 6 inches ditto. |
| 8th row. | 6 | Arbutus, of sorts. | 3 feet 4 inches ditto. |
| 9th row. | 6 | Green Tree Box. | 3 feet 4 inches ditto. |
| 10th row. | 4 | Portugal Laurel. | 5 feet ditto. |
| 11th row. | 4 | Irish Yew. | 5 feet ditto. |
| 12th row. | 4 | Common Green Holly. | 5 feet. |

2ND ARRANGEMENT.

- | | | | |
|-----------|----|--|------------------------|
| 1st row. | 20 | Daphne cneorum variegata, <i>a.</i> | 1 foot apart. |
| 2nd row. | 16 | Buxus nana; a dwarf, neat Box. | 1 foot 3 inches ditto. |
| 3rd row. | 12 | Berberis glumacea. | 1 foot 8 inches ditto. |
| 4th row. | 8 | Rhododendron ferrugineum, <i>a.</i> | 2 feet 6 inches do. |
| 5th row. | 8 | Andromeda formosa. | 2 feet 6 inches ditto. |
| 6th row. | 8 | Aucuba Japonica. | 2 feet 6 inches ditto. |
| 7th row. | 8 | Laurustinus. | 2 feet 6 inches ditto. |
| 8th row. | 6 | Tall Rhododendron, <i>a</i> ; various. | 3 feet 6 inches ditto. |
| 9th row. | 6 | Sweet Bay. | 3 feet 6 inches ditto. |
| 10th row. | 4 | Silver-striped Holly. | 5 feet ditto. |
| 11th row. | 4 | Portugal Laurel. | 5 feet ditto. |
| 12th row. | 4 | American Arbor Vite. | 5 feet ditto. |

If flowering, deciduous shrubs are chosen, then Roses, Snowball Trees, purple-leaved Hazel, and purple-leaved Berberis,—a row of each,—may be introduced, instead of some of the evergreens.

Every kind must be kept distinct, by pruning in straggling shoots. Those marked *a* should have some peat soil to each, at the time of planting.—T. APPLEBY.

THE SCIENCE OF GARDENING.

(Continued from page 268.)

It is quite certain, that every plant, when growing in a favourite soil in its native climate, has its roots growing in the temperature which is best accordant with that in which its branches are delighting. Under no circumstances, if the plant is flourishing, will the temperature in summer, at twelve inches from the surface, be found to be less than 2° , nor more than 5° lower than the average temperature of the atmosphere; and in winter, that temperature, at the same depth, will be found to range similarly above the atmospheric temperature. It is quite true, that at the Chiswick Garden of the London Horticultural Society, and elsewhere, there is a difference of 10° , or more, between the temperature of the soil at that depth, and the temperature of the air; but this only is evidence that the drainage, or composition of the soil, are defective. If the difference of temperature was less, the plants grown on such soils would be more early, and more healthy in their vegetation.

There is no doubt, that in tropical climates, the bare, exposed soil becomes heated, for a few inches in depth, to a degree higher than that of the air incumbent upon it. But this is not the case about the roots of plants; for their foliage, and the herbage naturally clothing the soil, preserve this from such a pernicious elevation of temperature. Besides, we have seen that a foot below the surface the temperature is but slightly elevated, or depressed. That an excessive elevation is injurious, is known to every observer of plants, whether the plants are growing in the tropics or in a stove. The roots are stimulated to imbibe moisture faster than the foliage can sufficiently digest the sap thus forced to them, and that foliage is expanded wider and more weakly, in the vain effort to keep pace with the supply. This is only one among many instances of that property, so wisely given to organised beings by their Creator, of adapting themselves to circumstances; and it is only when the vicissitudes of those circumstances are too violent, or too long continued, that they fail in their effort at conformity.

If the temperature of the soil be unnaturally below that in

which the branches are vegetating, the effects are equally, though differently, disastrous. The supply of sap is too much diminished in quantity, and the edges of the leaves consequently die, or the blossoms fall, or disease attacks some part of the fruit, according to the nature of the plant, or the stage of growth in which it occurs. The shanking in Grapes appears traceable to this cause.

A soil abounding in superfluous water is always colder than a soil of similar constitution that has been well drained. The reason for this is obviously, that the same quantity of caloric which will heat the earth 4° will only heat water 1° ; or, to use the language of the chemist, the capacity for heat of water is four times greater than that of the earth's. In everyday experience, we see the low lying, and, consequently, the wettest portions of a field, are always those on which the evening mist, or fog, first appears; for at one season of the year it becomes colder than the air, and the atmospheric moisture always precipitates first on the coldest surface. At other seasons of the year, evaporation from the wettest portion of a field is the most abundant; and, at those seasons, mists are formed by the temperature of the air being much below that of the earth, and, consequently, condensing its watery exhalations. The greater the difference of temperature, the denser is the mist, the condensation being more complete.

When the season for sowing arrives, we may fearlessly commit our seed to the ground whenever it is in good working condition; although, by observing the coincidences of Nature, we may prejudge when late sowing will be as efficient as early sowing, in producing forward crops.

The attempt to attain knowledge on this subject is not new; for, nearly a century since, Harald Barck and Alexander Berger, in Sweden, made many observations directed to this object; and in later years, Stillingfleet and Martyn have done the same, in England.

The first-named of these botanists thus expresses himself upon the subject:—"If botanists noted the time of the foliation and blossoming of trees and herbs, and the days on which the seed is sown, flowers, and ripens; and if they continued these observations for many years, there can be no doubt but that we might find some rule from which we might conclude at what time grains and culinary plants, according to the nature of each soil, ought to be sown; nor should we be at a loss to guess at the approach of winter; nor ignorant whether we ought to make our autumn sowing later or earlier."

M. Barck would derive his intimations from the vegetable tribes alone; but we think the other kingdoms of organic nature might be included—as the appearances of certain migratory birds, and the birth of certain insects. For example, in the East of England, it is a common saying among gardeners,—confirmed by practice,—"When you have seen two swallows together, sow Kidney Beans."

This synchronical mode of regulating the operations of the cultivator of the soil is no modern suggestion; but the efforts of Barck, and his successors, have only been to find such indications in our northern clime that would be of the same utility, and similarly admonitory as others adopted by the ancients in more sunny latitudes. Thus, Hesiod says, "If it rain three days together when the Cuckoo sings, then late sowing will be as good as early sowing; and in another place, when snails begin to move and climb up plants, cease from digging about Vines, and take to pruning."

That our operations may be made justly synchronical with certain appearances in nature, is supported even by our present limited knowledge. "It is wonderful," says Mr. Stillingfleet, "to observe the conformity between vegetation and the arrival of certain birds of passage. I will give one instance, as marked down in a diary kept by me in Norfolk, in the year 1755. 'April 16th. Young Figs appear; the 17th of the same month the Cuckoo sings.' Now the word κοκκυξ signifies a Cuckoo and the Young Fig, and the reason given for it is, that in Greece they appeared together. I will just add, that the same year I first found the Cuckoo flower in blossom, the 19th of April."

"Linnaeus says, that the Wood Anemone blows when the Swallow arrives. In my diary for the year, 1755, I find the swallow appeared April 6th, and the Wood Anemone was in blow on the 10th of the same month. He says that the Marsh Marigold blows when the Cuckoo sings. Accordingly, in my diary, that flower was in blow April 7th, and the same day the Cuckoo sang."

Then, again, whatever may be the character of the season,

whether it be unusually cold, or preternaturally mild, the same order prevails in the leafing of plants:—

- | | |
|-------------------|---------------------|
| 1. Honeysuckle | 19. Marsh Elder |
| 2. Gooseberry | 20. Wych Elm |
| 3. Currant | 21. Quicken Tree |
| 4. Elder | 22. Hornbeam |
| 5. Birch | 23. Apple |
| 6. Weeping Willow | 24. Abole |
| 7. Raspberry | 25. Chestnut |
| 8. Bramble | 26. Willow |
| 9. Briar | 27. Oak |
| 10. Plum | 28. Lime |
| 11. Apricot | 29. Maple |
| 12. Peach | 30. Walnut |
| 13. Filbert | 31. Plane |
| 14. Sallow | 32. Black Poplar |
| 15. Alder | 33. Beech |
| 16. Sycamore | 34. Locust Tree |
| 17. Elm | 35. Ash |
| 18. Quince | 36. Carolina Poplar |

This invariable simultaneous change, this consistent adherence to the same order of time, seems to demonstrate that the same circumstances, the same variations of cold and moisture endured, produce this general similar effect: they make all plants delay or accelerate their leafing to the most favourable time for vegetating. It seems to follow, therefore, that if it be found one year that the best Potato crop was obtained by planting on the 15th of March, being the first day the Gooseberry-leaves opened, and that the following year the leaves of the same tree did not open until the 7th of April, that in such case the Potato planting might be delayed until then; for, as M. Barck observes, "No one can deny but the same influences which bring forth the leaves of trees will also make grain vegetate, and no one can justly assert that a premature sowing will always and everywhere accelerate a ripe harvest."

We beg to explain, that our illustration by Potato planting is a mere assumption, and that we do not intend to advance that the leafing of the Gooseberry and Potato planting ought to be simultaneous. We only throw out the suggestion for others to confirm, or to refute by observation and experiment, adding only thus much, that Mr. Stillingfleet, one of the most careful of Nature's observers, says, that in his time "the prudent gardener never ventured to put his house-plants out until the Mulberry leaf was of a certain growth."—J.

(To be continued.)

THE NEW ZEALAND RUNNING BEAN.

The following are the particulars relative to this Bean, furnished by Mr. Cuthill. He received it from Mr. J. Woeniald, who gives this as its history:—"Two years ago, I had a friend staying at my house, who had been travelling nearly all over New Zealand. He, knowing I was fond of plants, especially anything that was rare, brought me over several sorts of seed; and I have many plants in my hothouse at this moment, which are very curious; and I cannot find any other party in this neighbourhood who knows, or has seen anything like them. Amongst the rest were four Beans, similar to the one I sent you. The gentleman who brought the seeds over for me has since gone back again, and he told me how he came by the Beans. He was in the very centre of New Zealand, on an expedition, and was passed by the native chiefs to different districts, when he met with a French missionary, who asked him if he had tasted the said Bean. He had not. He then had some, when he pronounced them very fine (the natives nearly consider them their chief vegetable); and he put about a dozen in his pocket, and gave me the four I allude to (they are only common in the centre of the Island amongst the natives, and are not known in Auckland). I put them into pots, in the hothouse, the spring before last, and then transplanted them out in the garden. They were very prolific, and last year I had the produce sown at the same time as the Scarlet Runner; but the produce was quite equal, if not more, and the taste of them is far finer, being more tender and richer in flavour."

Mr. Cuthill says:—"My own observations while growing here, last summer, were, that it grows tall and strong, leaf large, and heart shaped, droops at sun-set, pinky white blossom, a great bearer, pod size of Scarlet Runner, but more tender and richer in flavour, not having the strong rough flavour of the Scarlet

Runner. The pod, while ripening, gets beautifully striped, crimson and green. The treatment exactly like the Scarlet Runner, but, being a strong grower, may be planted further apart —say, six inches Bean from Bean, and six feet row from row. The ripe Beans I have cooked twice, as well as a lady near here: they cook mealy, and have the flavour something like a Spanish Chestnut. Should this Bean turn out to be a good forcer, its value will be great indeed."

Mr. Cuthill has sent us some of the ripe Beans, and they immediately struck us as resembling those we had seen many years ago, of the *Phaseolus Tunkinensis*. We cannot be more assured of this until we have seen the plant in its maturity.

The *Phaseolus Tunkinensis* is a native of Cochin China, and, therefore, not unsuited to the climate of New Zealand. That those of our readers who may grow Mr. Cuthill's Bean may compare it with the *Phaseolus Tunkinensis*, we extract a description of the latter from Loureiro's *Flora Cochin-Chinensis*:

" *PHASEOLUS TUNKINENSIS*.—Stem annual, twining, and very branching. Leaves trifoliate, conical, small, thick, glabrous, and flat. Flowers white, racemose, axillary; vexillum revolute. Pod somewhat lunate, compressed, smooth, pendulous, and three-seeded. Seeds ovate, pale, variegated with red. Eatible."

QUERIES AND ANSWERS.

RE-INVIGORATING OLD YEWS.

" A number of old and noble specimens of Yew trees, in the North of Scotland, suffered considerably by frost in the severe winter of 1854. They have made less foliage than formerly, and many of the smaller branches, towards the top, have died, and those yearly produced are few and feeble in growth. For a year or two past, they have been much injured by bleak easterly winds, very prevalent here in the spring; and, being in a debilitated state, it is well through the summer before they assume their natural hue. Could they be made to grow more vigorous, I am convinced they would withstand the ordinary climate of the district. My worthy master is in great trouble at seeing their declining health, and I beg to consult you what is best to be done, to save them from apparently rapid decay. They stand on a fine lawn, kept in low grass, well sheltered. The soil is a gravelly loam, resting on clay, slightly damp, but not in excess. Draining could be done, if advisable. Abundance of good compost, or liquid manure, from a tank in the farmyard, can be applied in any way your valued experience may suggest. I may state, that some of their trunks measure from ten to thirteen feet in girth, three feet from the ground, and very proportionable for their habit. The wood is quite sound, as several of the shabby ones have been felled lately, when there was not the slightest appearance of internal decay visible. I am sorry I am unable to state the exact age of these noble witnesses of a past generation."—A NORTH BRITON.

[Your trees were planted about the time when the "old Church" at Beauly was built, and probably by the same parties, or kind of people. At all events, it is a consolation that extremely old Yews can, like the old eagles, be re-invigorated. The ancient Yews, in the Dutch garden at Hampton Court, were, before the Crimean war, in a much worse condition than yours; but now they are getting green from the very face, or bark, of the oldest rugged parts, as well as from the stumps of old rotten branches, and such boughs as were worth preserving. The process of recovery must necessarily take some years to accomplish, as these Yews are opposite the very garden entrance to the Palace. But on Highgate Hill, in the nursery of Mr. Cutbush, a row of worn-out Yews, of immense size, were cut into the quick—that is, every bough, shoot, and branch, were cut to near the old wood, and parts of the old top wood also. That was done thirty-five years back; the soil was renewed, or trenched round the roots; and that row is now, and has been for the last thirty years, one of the most luxuriantly healthy Yew hedges in the kingdom. The heads of the old trees, at Hampton Court, can only be thinned and cut in very sparingly from time to time, so as not to be missed; but their roots have been reached, and every particle of old soil over them, and among them, and all round them, has been picked out, or forked, and removed; and many of them, outstretching too far, were cut back to several lengths. The best bedding soil was placed next these roots, and over them, in various depths, according to the inequalities among

the roots. The surface was perfectly level, and covered with bedding plants in summer. *Tom Thumbs* do as well as Holly under the shade of old Yews, that are undergoing the process of renewing their age, in one-third loam, one-third leaf mould, and the rest of the best mixtures from the general rubbish heap. The gardener's receipt is this: cut, clean, and thin, the top of the tree, and remove the soil from the roots, regulate them, and give them good stuff; that is all that is necessary.]

PELARGONIUMS TO BLOOM IN JULY.

" I would like my Geraniums to be in full flower about the first of July. I have a flue through my greenhouse, so that I could assist them with a little heat, if needful. When should I start them? They are fine bushy plants, struck in March."—VERBENA.

[If your plants are bushy enough, and you do not wish them extra large, they will come in at the time you wish, with common greenhouse treatment. If some of the shoots are more forward than the rest, they should be stopped to have uniform growth; and in that case, the plants might want a few degrees more heat, in March. If, in addition to this stopping, you contemplate the repotting the plants again, the stopping should be done at once, and the repotting a fortnight or three weeks afterwards. Then increase the heat to from 45° to 50°, with plenty of air to encourage free rooting and compact growth.]

AIR PIPES FOR HOT-WATER HEATING—MAKING VINE BORDERS.

" I have two vinearies heated by hot water, and at the highest end of the pipe I have a tap, to let off the air when the pipes are filled up. The man that put the pipes in, said that the taps would answer instead of air pipes. But it seems to me that they would not answer; for the water, instead of circulating, boils over at the top of the cistern. I have a Vine border to make, and shall be obliged to you for a few remarks on the subject. I have drained the border five feet deep, and filled the drains up with chalk two feet, with six inches of chalk all over the border, and two inches of concrete on the top of that; and I intend to fill up with sods out of an old pasture, and with lime rubbish, brick-bats, rotten manure, three-quarter bonedust, and leaf soil. I have two dead horses, that I mean to put in ten feet from the Vine. I think to put some quicklime in with them, and in three or four years time I think to turn the soils up altogether, to see whether it will be right, for the Vines to run into; if not, I shall put them further back."—A CONSTANT READER.

[We do not consider taps so good for letting off air as a small, open air pipe, higher than the position of the cistern, because taps require attention, and open pipes do not. If you turn your tap, and find no air issuing out freely, the air is not the cause of want of circulation, nor of the overflowing of the cistern; but that cistern is either unsuitably placed, or is too small to allow of the expansion of water when heated. In making a Vine border in ordinary circumstances, we would sink less than the half of five feet, drain and concrete, and have a portion, at least, of the border above the ground level. We would most certainly have nothing to do with dead horses in making Vine borders, though we would not turn aside from their skeletons, when the flesh was decomposed from them. The bones broken up, we would mix with the bricks and lime rubbish. Your other ideas we agree with.]

LILIUM JAPONICUM GREEN IN WINTER—GENERAL JACQUEMINOT ROSE.

" Last March, I planted out, in a bed in my garden, a lot of small bulbs of *Lilium Japonicum*. Several of them, to my surprise, showed flower late in the season, but the frosts of November prevented them from opening. The buds, however, are still plump, and the leaves green; in fact, the plants are still growing. What am I to do with them, so as to get them to flower next season in pots? This is not the first time I have been puzzled by these Lilies; as, on a former occasion, when growing large roots in pots, the same foliage lasted for two seasons. The second season, of course, they did not flower, and this is what I fear may be the case with those referred to.

"The weather continues very mild, with heavy rains, and some sunny days, and vegetation is much too far advanced. A few Snow-drops are in bloom; *Malmaison Rose* and *Général Jacqueminot* opening; crimson and common *Chinas* in flower. By the way, the *Général* is the best perpetual Rose I have yet seen. I have a bed of it, which, from the 15th of June to the 16th of December, was never without quantities of flower, and on the last date one flower was as perfect as any during the whole summer."—J. C.

[The bulbs of *Lilium Japonicum* make offsets very freely, and the leaves of these offsets keep green from twelve to thirty months, according to size, strength, and the circumstances under which the plant is managed; but old or established flowering bulbs cast their leaves after every flowering, or every year, for no bulb flowers more constantly than *Lilium Japonicum*. The part of the country where your garden is, is more favourable than most places north of London, as this Lily does little good out of doors, northwards. But if you preserve the leaves, flower-stalks, and buds from frost, the plant will flower, sure enough, for it has no stated time of flowering, under variable culture, although from May to August is the more usual time for it to be in bloom.]

We are glad to learn that *Général Jacqueminot* is so good a bedder. We hoped so from the first day we saw it, and since then we have had to fight for it, in order to keep it in the front ranks; but, like many more of them, he is rather light-headed, and rather too free, we fear, in beds. Yet, with it all, he is one of the very best coloured, and most useful of all the Roses.]

CULTURE OF INDIAN-RUBBER PLANT.

"Please to inform me how the *Ficus elastica* is propagated? I have one about six feet high, but it has but one long shoot, about two feet long. There are three or four small ones on the main stem, but they do not seem to increase in size at all. They are about an inch long."—M. P.

[If you were to pick out the terminal bud of your plant, or bend the shoot to one side, you would throw more vigour into these little shoots. When they get about three or four inches long, let the plant get rather dry for a week, and then slip off a couple of the shoots close to the stem, with a sharp knife. Keep the plant dry a week or so longer, only preventing flagging, and rub powdered chalk into the wound. Lay the ends of the cuttings in dry sand, and after a few days insert them in sand and charcoal, in a hotbed, and they will soon strike root.]

ENTOMOLOGICAL SOCIETY'S MEETING.

THE first Meeting of the ENTOMOLOGICAL SOCIETY for the present year was held at the Society's Rooms, in Bedford Row, on the 3rd of January, the chair being occupied by the President, Dr. J. E. Gray, F.R.S., &c. Amongst the donations to the library received since the last Meeting, was a remarkable memoir, by Mr. J. Lubbock, on the muscular structure of Caterpillars; and a new volume of the Monograph on the Libellulidae, by M. Selys and Dr. Hagen.

Mr. Samuel Stevens exhibited several very fine and new species of Beetles, from the interior of Peru; and Mr. Augustus Sheppard, various Coleoptera, from Melbourne, Australia.

Mr. Waterhouse exhibited specimens of two small Beetles, new to the British fauna, one of them belonging to a genus not heretofore found in this country—namely, the *Symbiotes latus*, of Redtenbacher, taken at Ryde, Isle of Wight, by sweeping low herbs; also, *Tachysa lata*, taken at Highgate.

Mr. Lanson also exhibited *Symbiotes latus*, which he had obtained from the nest of *Formica flava*, and under bark. It had been described by Mr. Wollaston, under the generic name of *Microchondrus*. He also exhibited *Oxypoda spectabilis*, of Merkel, taken by Mr. Hislop.

Mr. Pickard exhibited a new Microlepidopterous insect, from Portland.

Mr. A. White exhibited a drawing of a very remarkable crustaceous animal, belonging to the Isopodous family, *Sphaeromidae*, or Marine Woodlice, having an elongated horn on the front of the head, a character not hitherto noticed in any species of the family. It had been taken in Bass's Straits, during the voyage of the *Herald*. Mr. White proposed to call it *Cephaloniscus Grayianus*, in honour of the President. He also pointed out an

analogous instance in the fossil trilobites, occurring in the genus *Enerinurus*.

Mr. F. Walker exhibited a vegetable gall, from Sierra Leone, said to have been formed by a species of thrips, being the first instance in which such habits had been attributed to these very troublesome insects. The galls on the Lime-tree leaves, noticed at a former Meeting, were produced by *Sarcoptes Tiliae*, of Turpin, a species of mite, an account of which had been published in the *Mémoires de l'Institut* for 1835.

Mr. F. Smith read an extended notice of the various species of Hymenopterous insects, which he had observed to have been infested with the remarkable parasites forming the family Stylopidae. In addition to the genera of bees, Halictus and Andrena (every specimen which he had met with of *Andrena convexiuscula* having been infested), he mentioned several species of *Ammophila*, or Sand Wasps, from Sicily, Tunis, and Gambia; several species of Sphecius from Brazil, Chili, and Aru; an Eumenes, from India; an Odynerus, from Brazil; and several Polybiid and Polistes. The exuviae of the parasite from one of the species of the last-named genus was so large, that Mr. Smith supposed the stylops would measure at least two-thirds of an inch.

Mr. Waterhouse read an extended memoir, containing descriptions of the British species of *Corticaria* and *Latridius*, two genera of minute Beetles, with observations on the synonymy of the species.

The President announced that a new part of the Transactions of the Society, completing the fourth part of the second series, was ready for distribution. He also gave notice of the alterations in the Council and officers, intended to be proposed at the next anniversary Meeting.

PORTRABLE HOTHOUSES.

WHETHER they are hot, or cold, or merely with the chill off, all plant-houses, for use or ornament, are called hothouses, in common garden language. The fruit of the inquiry about portable structures of this kind is now ripe. Therefore, my task is easy enough—only to hand out the fruit.

I think I have already thanked everyone who has helped to bring in the crop; but, to make quite sure, I do hereby thank them all over again. They made it quite plain and easy, for the next generation, and for the rising part of the present, to have a better, and more convenient class of hothouses, in all their varieties, than we of the grey locks and spectacles could boast of,—much cheaper, much better, much stronger, and much more easily and better ventilated houses, than anything we have had in command before now. To get rid of rafters entirely, and for ever, is a vast improvement, to begin with, as we gain so much more light by the change, and at the same time render the roof more secure and much stronger. To be able to have every pane of glass fixed, and so as to have no glass to slide up or down, or sideways, and yet have the whole house as portable as a bedstead, is altogether such as none of us ever yet dreamt of. But every description of hothouse, from the Crystal Palace downwards, can be so had, if we choose to have them so.

Some people may urge, that so much luxury, and such ease, will spoil the next generation of gardeners, and render them less capable of acting on the spur of the moment; and I must concede the point to them, for I know very well that when a man has no need of having all his wits about him, some of them will get lost, and surely some of them will get out of order. But, then, I must urge the very reasonable supposition, that, under a reformed system of hothouses, a gardener will have no reason to jump to a conclusion all at once, or act on the spur of the moment, in anything which relates to hothouses.

I said that I would give a section of the Messrs. Jackson's new house. Since then, however, I learned from Mr. Macrostie that he had put up some portable greenhouses, on purpose to be removed after awhile; and that being just the kind for which I was so much urged to

write about, I decided at once on giving a perspective view, and a section, with two more heads of detail, of one of the latest, which was put up here, at Surbiton, from Mr. Macrostie's own hand. There they are before you.

They have stood all weathers; and if I cannot describe the whole process, so as to make it as clear as Arcturus was, one night, in the tail of the comet, no one will be to blame but myself.

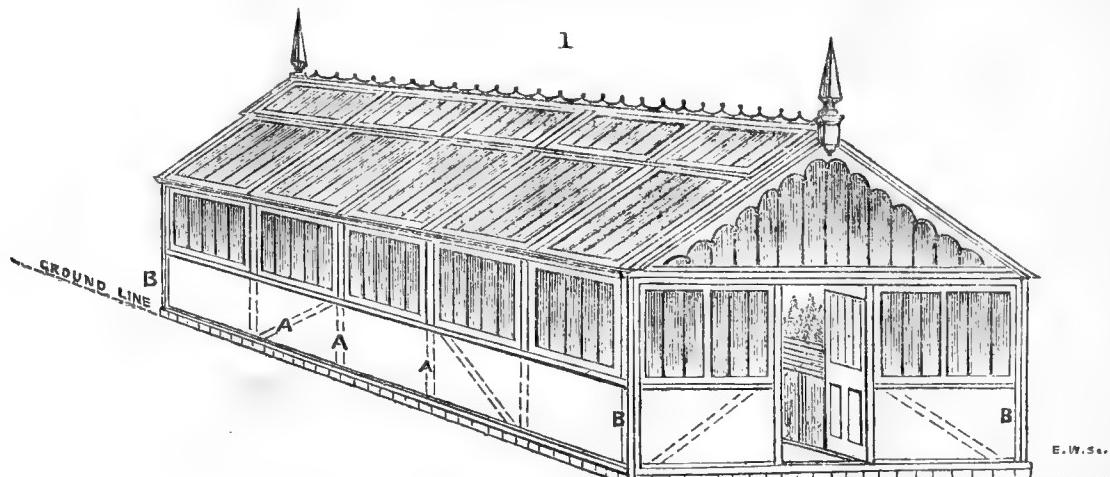


FIG. 1.—The dotted lines (A A A) show the framing, which would be covered with prepared boarding. The building would be fitted together, at B B B, with screws, or keys, so as to be easily put together, or taken asunder.

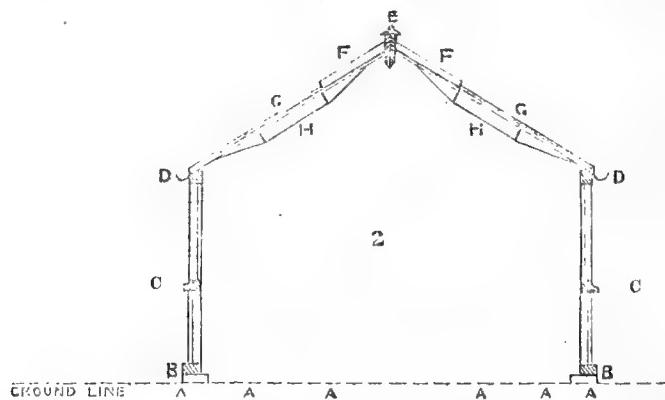


FIG. 2.—SECTION OF PORTABLE GREENHOUSE, WITHOUT RAFTERS, ON THE TRUSS PRINCIPLE.

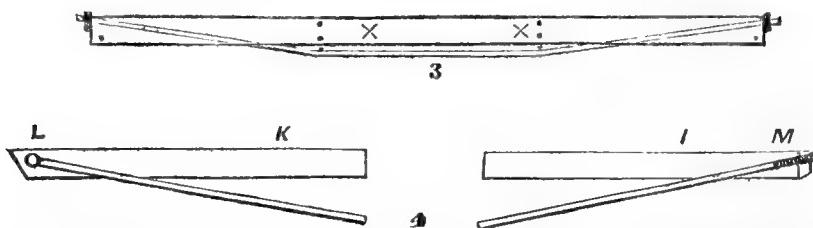


FIG. 3.—TRUSSSED RIDGE. FIG. 4.—DETAILS, SHOWING APPLICATION OF TRUSS.

A A are loose brick footings, laid on the surface of the ground.

B B are oak, or pitch pine, sill plates, in one length.

C and D are light sills and eaves' plates, in one length, having the uprights halved at C.

E is ridge in two thicknesses, of 9 inches by $1\frac{1}{2}$ inch each, with a flat iron truss $1\frac{3}{4}$ inch by $\frac{1}{4}$ inch, bolted between (as at x) to make it self-supporting.

F F are ventilating flap lights.

G G are fixed lights.

H H are iron trusses, to support the roof, instead of rafters.

I and x the detail of ends of lights, showing the application of truss rods.

L is the top of lights.

M bottom end of lights. For a roof with lights 20 feet long, the trusses would do, if made with $\frac{1}{2}$ -inch round rod iron of s. c. quality.

In the first place, the house represented in perspective (fig. 1) is larger than the scale to suit our purpose would tell; therefore, no scale is given. Such a house may be made 100 feet in length, either as a span or lean-to, and of any desirable width; but a span-roofed house is the best for plants, and the easiest to make portable. The sides and ends may be made in different lengths, or pieces, as already proposed by Mr. Robson and Mr. Fish. The house itself stands on one row of bricks on edge, "footing" fashion—that is, across the length of the bottom sill; and the bricks are on the hard surface of the ground, nothing more being necessary, solely owing to the mechanical contrivance of the roof.

In the first place, the ridge is a three-inch deal, sawed in two flitches, or boards: the two boards stand one inch apart, or hardly so much, being so kept by small iron bolts (fig. 3, x x). The ridge piece is, therefore, nine inches deep,—the depth of a deal,—about four inches wide, and thirty-four feet long. It supports itself in a horizontal position, as straight as a gun-barrel, without your seeing how. The great secret is nearly hid between the two side boards: it is a flat iron truss, one inch and three quarters in width, and half an inch in thickness. Such a small bar of iron, doing such work, is the best evidence I have ever seen, or heard, of the principle of trussing being capable of such applications as render the

strength of small beams, girders, or purlines, much more than that of girders of any practical dimensions whatever. A square log, of eighteen inches on the side, placed as breastsummers,—technically, “brace-hammers,”—would hardly carry more weight, securely, than this kind of truss, which is fastened at both ends, near the upper corners of the two ridge boards, by nuts and screws. From the shoe, or fastening points (*L* and *M*, fig. 4), the iron truss comes down to the lower edges of the nine-inch boards, each at one-third the length of the ridge; and then two iron bolts, an inch thick, are put between the upper edge of the iron-bar truss and the two lower edges of the ridge board. The nut is then screwed on to the end of the truss, at *x*, and turned till the pressure of the centre of the truss against the two cross bolts is strong enough to hold up the ridge. The ridge is then capped, and you see nothing but the plain bar just outside the lower edge of the ridge in the middle—the part which is left out in fig. 4, to give room.

Various ways of applying this suspension trussing are given in Herbert's “Engineer's and Mechanic's Encyclopædia,” vol. I., pp. 158—161; but Mr. Macrostie is the first who has applied it successfully to the ridges of span-roofed houses, so as to need no support. The rest of fig. 1, such as the side walls, is in one half wood and the rest glass. The fancy ridge finish, and the style of the end, tell their own tale; but any one may alter them to suit his own taste, without infringing on the principle of construction.

Fig. 2. The section of the same house, and the only part wanting explanation. The lights are here seen in the usual way—the short ones (*F* *F*) at the top, to slide over the long one. But that is not the way at all. There is no sliding: the upper part of the short light is hinged to the ridge, and it opens *up* by a cord over a pulley. All the short lights on one side might open with one more, on the principle of sympathetic movement. These short lights are only three feet, and the sides of the bottom lights run up under them to the ridge, where they are fastened. When they are putting up one of these roofs, the ridge is the first thing fixed; then all the bottom lights, without the ventilator lights. The sides of the lights stand one inch apart all over the roof—that is, the side of light No. 2, stands one inch apart from the side of No. 1. That inch opening is where the rafter ought to be, and there is such an opening where each rafter should be. In the section, you only see one side of light No. 2, and the one which corresponds with it on the other side of the span. Each of these sides looks like an archer's bow, the string being the side of the light—the upper line, and the bow is bent in the line *H*. From the bow, *H*, to the string are two cross pieces, or legs. At the bottom of the bow, at *D* (the same as *M*, fig. 4), is a screw, and the top, at *F* (or *L*, fig. 4), is an eye. *H* is the truss rod, which is only half an inch in diameter, but does the work of a rafter. The top and bottom of the truss rod come in between the sides of each of the two lights, and are fastened there, at the top, by means of the eye. An iron bolt, half an inch in diameter and three inches long, passes through the eye, and enters a hole in the side of each light; and the bottom being a screw, a nut is worked on it, which nut embraces the bottoms of the two lights. Then, by screwing up this nut, the rod (*H*) is brought to a tension, or full stretch, and the two cross bolts, or legs, from it, press up against the sides of the light by means of a *T* end. Now, screw up the nut, and these two legs will push up the sides of the lights to the right pitch of a rafter, or higher still, till the sides of the lights break, if they yield before the truss rod would snap by the tension. When the truss rod is stretched to the right pitch for the lights, any extra weight put on the roof,—say, a deep fall of snow from above, or an enormous crop of Grapes from below,—the effect on the roof is the opposite to that which would affect a rafter: an extra weight would cause the rafter and the lights to sag,—technically,

to deflex,—but an extra weight on the truss would cause the roof to heave upwards. A span roof, or a lean-to roof, thus trussed, will not cause a sideways pressure to the walls, or glass sides, on which it is placed: it will not only not cause lateral pressure, but by fixing it with screws, one in the middle of each light, to the plate, at *n*, it keeps the sides, either on the perpendicular, or at an easy angle, if that is required. The power of the truss is perfectly astounding, when compared with the size of the truss rod. Place a lath between two chairs, and a weight of a few pounds, put on the middle, will break it, because both ends are free; but block up, or nail, the two ends, and it will require from twenty to thirty times the weight put on it to snap it: that is the first degree in trussing. Now join the two ends of the lath by means of a truss like ours, and put two short pieces (as at *H*, fig. 2) at the “necessary points,” and the lath will carry 400 times the weight. The “necessary points” are as essential to know as the property of the truss.

For all practical purposes, in hothouse building, the length of a truss should be in three equal divisions. They are all so at the Crystal Palace, every part of which, galleries, girders, ridges, valleys, and all about it, are on the trussing system, which is the secret of its enormous strength against all weathers. Every truss about that Palace is twenty-four feet long, in three divisions of eight feet each; then eight and sixteen are the “necessary points” for the legs, or cross-pieces,—as seen, at *H*, in our section,—for their trusses. And so with ours, and all in our line. Thirty-four feet, I believe, is the longest length that Mr. Macrostie has yet done in trussing, without a truss: that is the exact length of Messrs. Jackson's new trussed-house. That house is twenty-two feet wide, and the roof rests on two old walls, which would bulge out at the least lateral strain; but the pressure of the trussed roof falls so perpendicularly upon them, that they cannot budge from under it. The truss rods for that house are not more than half an inch in diameter, and the ridge is in two flitches, or boards, an inch and a half thick, and nine inches deep, or wide, just the same as in the house of which the view is given. That house is at Surbiton, but I must not say where, as, although our readers are respectable people, some others might hear of it who have brass enough to truss a pyramid; and they would be sure to bother the owner of the house to death, asking to see it, every hour of the day, and every day in the year, Sundays and all. But, supposing the virtue of one truss to end at thirty-four feet,—I put it at forty on scale, the length that is proved,—still we can double thirty-four, and have no prop for the ridge in portable houses. Surely, another such house of thirty-four feet stretch, placed against the end of the one in Kingston Nursery, would stand, and be as firm as the present one. Then, you have a house sixty-eight feet long, and twenty-two feet wide; but you may rely upon one seventy feet long, and thirty feet wide, if that is a comfort on “flitting day,” as they say in Dingwall, when a tenant is leaving a place. You may place it on the green sward, or on wheels to go that way from place to place, or, better still, on a stretch of rail instead of a sill. I once saw a house of about that size going and coming on rails, just like a locomotive engine. It was a wooden house, thatched, to run off and on, for covering an Orchid-house, at Chatsworth, and Mr. Eyles, who is now at the Crystal Palace, was the guard on that occasion.

The gardeners at the Experimental Garden are delighted with the new houses there, which are fixed, but without anything in the way of stays across, or supports, to keep them from tumbling down. One house, the new greenhouse, is a double house, and a lean-to, if that can be understood. But this is how it is. It leans against the back wall of a house belonging to the offices, but the office of which is removed elsewhere: that house stands to the north aspect, and was the principal house for

storing bulbs, Fuchsias, and all the half-dry plants, in winter: it had a large copper, back-kitchen-like boiler, and to this a set of hot-water pipes were formerly fixed; and the front wall, facing the north, was pierced, and a good piece of it was glazed, to give more light; but the sun never entered there. The back wall of this house was high enough for any greenhouse, besides facing the meridian sun, and so it was that the greenhouse was put there. How this was done may be of great use elsewhere: a question about something of the kind was in our pages, and answered, just as we were in the midst of the change. On the top of the wall was a wall-plate, to receive the rafters of the old roof, and to this plate, and these rafters, we resolved to fix the top of the lights for the new greenhouse. Two or three rows of slate had to be removed for that purpose, and the roof, trussed, as I have said, was then fixed, and the slate made to take the same slope and angle as the glass. The lights are sixteen or seventeen feet long, and every other has the same top, short ventilator light, as seen in the section (fig. 2), opening outwards and upwards, with a cord and pully. Nothing ever answered better.

But the best part was the next, and that was, to pull down a yard of the back wall, from end to end, and let in the sun to the dormitory, every part of which is now lighted by the sun in full, thus making a double house of a lean-to. The way the wall was taken down, was, to begin at one end; and, when four feet of it were open, a support was blocked in, to keep up the roof plate; and so on, at every four feet, to the other end. The top of the reduced wall was cemented, and it makes the best, or one of the best shelves in England, for the *Golden Chain*; but whether that shelf be in the old house at home, or in the new one, it would be easier to truss a roof than to decide. The bottom of the wall is pierced in three parts at the floor level of both houses, and the boiler is in the same place, with a new set of pipes; and, as the air cools in the new or old house the soonest, it will pass through these bottom openings. The heat in both houses is always the same.

The conservatory roof is fixed to the mansion, as Mr. Eyles fixed his new house to the Crystal Palace, and the top ventilation is the same way as with him. So that, altogether, the Palaciers and the Experimentalists were working very near to the same scale, and at the same moment. We have but one-inch openings where the rafters would be, and we have the openings capped. Sir Joseph Paxton's plan is six-inch openings, and the capping to be the means for ventilation. I agree with him, that that is the best plan for most, or all houses; and Mr. Macrostie agrees with me, that nothing is more easy than to let our openings be the same as at Sydenham; but neither he nor I would adopt the trussed girders across the roof, as they have it. It is not cheaper than the small-rod truss, in place of the rafter, and it certainly is not nearly so good-looking, or so convenient for training. Each of our rods stands nine inches from the glass; but any distance from the glass, for training, may be done by the cross legs between the truss-rod and the lights, the rod itself being the principal for training up the Vine against; and the legs might have one eye, or half T, to let up another wire on each side of the truss-rod, in the usual way. But for Peach-houses, and for climbers in conservatories, it is best to run the wires across the roof, and then the truss-rods come in handy to fasten them to. Roof ventilation is, most certainly, best done on Sir Joseph's new system, between the lights, and by having the "walls" in boards, or in boards and glass, like the before-mentioned house (fig. 1). The boarding should be "up and down," not weather-edged fashion, and between the "ups and downs" ventilation should be given, as on the roof.

Then, to refine the thing, and to do it on a philosophical touch, run a rod as small as our truss rod along the gutter; and get the ends of all the caps over the openings

on the roof to move right and left, by one turn of the rod at one corner of the house; and all the front openings, between the up and down boards, the same, by a second rod, or by any other move which you may think better.

D. BEATON.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 266.)

CHESTNUTS.

We can hardly call the chestnut a British fruit. It is true, that in some situations in the southern counties it ripens fruit, but that is generally so very inferior to what is imported from Spain and the South of France, that no one would think of planting the chestnut for its fruit alone. It is as a timber tree that it is so highly valued in this country.

The following are the varieties that succeed best; but it is only in hot summers that they attain much excellence:—

DEVONSHIRE PROLIFIC (*New Prolific*).—This is by far the most abundant bearer, and ripens more thoroughly a general crop than any other.

DOWNTON (*Knight's Prolific*).—This is distinguished by the very short spines on the husks, and is not so prolific as the preceding.

CRABS.

THESE are grown mainly for ornament. Their fruit, being generally very highly or delicately coloured, contribute to the decoration of shrubberies in the autumn; while their flowers make them gay with blossoms in the spring. But there are some of the varieties which, besides being ornamental, are also very useful for preserving. Of these, the following are the most esteemed:—

CHEERY CRAB (*Cherry Apple; Scarlet Siberian*).—Very small, the size and colour of a cherry, roundish oblong, flat at the ends, of a bright shining scarlet colour, with the appearance as if it had been varnished. Stalk very long and slender. Eye small. Flesh crisp, with a fine agreeable acidity. Used for preserving. September and October.

ROYAL CHARLOTTE.—Medium sized, ovate. Skin of a delicate waxen yellow, tinged with red all over, but covered with a dark red cheek next the sun. Eye with long, pointed segments, and moderately sunk. Stalk slender, an inch long. Flesh white, very tender, with a fine, agreeable acidity. September and October.

SIERIAN (*Yellow Siberian*).—Small, conical. Skin waxen yellow in the shade, and streaked with red next the sun. Eye large and protruding, closed. Flesh briskly acid. September and October.

TRANSPARENTE.—Below medium size, oblate. Skin yellowish white, and waxen-like. Eye with very long and spreading segments, sunk. Stalk long and slender. Flesh translucent, opaline, with a brisk and agreeable acidity. October.

CRANBERRIES.

THOUGH these cannot be grown so generally as the other kinds of fruits, there are some who, having devoted their attention to the subject, have succeeded in forming artificial swamps where cranberries have been cultivated with great success. Wherever there is a command, and a plentiful supply of running water, with abundance of peat soil, no difficulty need be experienced in growing cranberries. The two species most worth cultivating are the English and the American.

ENGLISH (*Oxycoccus palustris*).—This grows abundantly in bogs, or swamps, in many parts of England. The fruit is the size of a pea, and the skin pale red; they have a somewhat acrid flavour and a strong acidity.

AMERICAN (*Oxycoccus macrocarpus*).—Of this there are three varieties:—

1. Cherry Cranberry, is large, round, and of a dark red colour, resembling a small cherry.

2. Bugle Cranberry, so called from the shape being like a bugle bead, long, and approaching an oval. Skin pale, and not so deep a crimson as the other varieties.

3. Bell Cranberry, is bell-shaped, or turbinate, and of a dark coral red. This is a very large variety, and is a great favourite with American growers.

(To be continued.)

ABIES VERSUS PINUS.

DEAR MR. EDITOR,—I have not the pleasure, certainly, of your personal acquaintance, to account for such familiarity of address; but I feel as though I knew you, and pretty intimately, too, having paid all attention to your weekly "sayings and doings" ever since 1849.

But, to come at once to the subject of this letter, which I have headed *Abies v. Pinus*, I, in common, of course, with thousands of others, am a devoted admirer of that noble class of tree,—of comparatively recent introduction into this country,—known by the name of the *Pine*. But, further, having somewhat of the old *bachelor* about me, I am very particular as to the proper nomenclature of my favourites.

Now, the principal object of this letter, is, to ascertain (and who so proper to apply to, as dear Mr. Editor of THE COTTAGE GARDENER, my highly-esteemed friend of ten years standing) some rule by which to distinguish a tree belonging to the *Abies* section, from one calling itself *Pinus*.

At present, I confess, there seems to be a "distinction without a difference;" and, strange to say, I have been rather confused than enlightened, on this subject, from what I have been able to glean from your pages.

A letter, I think, from one of your valued correspondents (whose names, as you truly remarked a few weeks ago, are "as familiar to us all as household words") giving a list of Firs under the two distinct heads of *Abies* and *Pinus*, would be conferring a great kindness on many besides myself. But, I will just give you one instance of what I mean.

"Douglass's" Fir is one of my especial favourites, and, of course, when conversing with friends on gardening topics, I often have occasion to mention it; on the principle, that "out of the abundance of the heart the mouth speaketh." I did so the other day, giving it the prefix *Abies*, by which I have hitherto been accustomed to distinguish it (*Abies Douglassii*). My friend, however, immediately stopped my enthusiastic remarks, by saying, "Oh! you mean *Pinus Douglassii*," and forthwith led me into his Pinetum, where, sure enough, I found my favourite growing luxuriantly. Now, Mr. Editor, one does not, you know, like to be knocked down, even in so small a matter as this, especially when one feels much interested in it, and has taken every pains to be in the right.

Hence, then, my appeal to you; and I am the more anxious to hear what you have to say on this *veraxata quæstio*, as I see the same discrepancy among your own correspondents (*vide Vol. XV., pages 152 and 424*); the use of the term *Abies* or *Pinus* to this Douglass's Fir appearing to be immaterial.

When "Doctors differ, who shall decide?" One of the two appellations, I presume, must be right, and the other wrong, or, to use a milder term, *incorrect*. I turn to my Latin dictionary, which I have not opened, I am sorry to say, for many a long year, and find "Abies, the Fir, Fir-tree." I turn to "Pinus," and find the same definition. So I am none the wiser for this consultation.

Perhaps you will kindly say,—if you deign to notice this letter at all,—whether I am right in concluding that all *Pines* are Firs, but that *all Firs* are *not Pines*? and whether the latter term is used to designate the choicer and more delicate sorts, while the *Abies* brings to mind the rough and hardy mountaineer?

If this be so, how truthfully does dear old Virgil point out the distinction, when he talks of "*Abies, in montibus altis; Pinus, in Hortis;*" as though the latter required all the care, attention, and coddling of cultivation. Yet, again, on the other hand, do we not read and speak of the *Pine* forests of Norway, and elsewhere? Small coddling, I trow, do they receive, and but little attention, save what the saw and axe so unremittingly bestow.

So the more I think, the more I get puzzled, dear Mr. Editor; but, rather than go groping on in the dark about what is to me

a very interesting subject, I have at length determined to write to you, feeling convinced, that the best way to gain in knowledge is not to be ashamed of exposing one's ignorance.

Sincerely apologising for taking up so much of your valuable time and space, and wishing you and all your coadjutors, in every sense of the term, "A happy New Year!" believe me to remain a sincere well-wisher of THE COTTAGE GARDENER, and a warm admirer of—"THE DOUGLASS."

[More than two "Doctors" have differed in the classification of the Conifers, and we cannot, even though possessing all the proverbial self-confidence of Editors, venture to decide which is in the right. Don, Lindley, and Rafinesque, say that "the Douglas" is an *Abies*; Sabine and Lambert say it is a *Pinus*; Link calls it a *Picea*; whilst Carrière declares them all wrong, and names it a *Tsuga*, a name which has the botanical merit of being the most extravagant. If we refer to Martyn, and others of the older botanists, we find under the words "Fir Tree," "see *Pinus*," which intimates that they considered Firs and Pines synonymous. The Conifers are not a difficult natural order to arrange, and the difference of nomenclature arises chiefly from the generic characters being not generally agreed upon.

The difference between the genera *Pinus* and *Abies*, now mostly assented to by botanists, is, that in Pines the leaves are always in bundles of two or more together, and surrounded with a sheath at their base, whilst in Firs, the leaves are always solitary and without a sheath. If you examine your Douglass Conifer, you will find, according to those distinctions, that it is a Fir, *Abies*.—EDS.]

NOTES ON NEW OR RARE PLANTS.

RUBUS NUTANS. Wall. Nat. ord., Rosaceæ. Native of the Himalaya.—Habit dwarf and creeping, branching copiously. Branches three or four feet long, lying close to the ground, and rooting at the joints; round, covered with spreading, purplish-tinted hairs. Petioles moderately long, covered with short, spreading, purple hairs. Leaves trifoliate; lateral ones ovate, and the central ones nearly round; margins slightly lobed, and roughly serrated; smooth on the upper surface, rough and hispid on the lower surface. Stipules oblong, somewhat cut at the apex, and membranous. Inflorescence axillary and terminal; peduncles single flowered and solitary, when axillary; but when terminal, three or four are produced together. Calyx composed of five ovate, large, acuminate sepals, villous on the outside, with long, soft, purple hairs. Petals large, nearly round, pure white, spreading much. Stamens very numerous. Filaments nearly erect, filiform. Anthers large, yellow. Style as long as the filaments. Stigma concave, expanded, and with a villous margin.

Perfectly hardy, and, being of a neat, compact, trailing habit, it is admirably adapted for rockwork purposes. It sends out, in rich profusion, its large, handsome, white blossoms in August and September. Though yet very scarce, it need not be so very long, because every joint, if properly pegged down, and a little earth drawn around it, will make a plant. It delights in a moderately light soil, rather moist than dry, and prefers shade to exposure.

LYSIMACHIA NUTANS. Nees. Nat. ord., Primulaceæ. Native of South Africa.—Herbaceous perennial, with erect, glabrous, slightly quadrangular stems, about eighteen inches high. Petioles short, gradually swelling out into the lanceolate, acuminate limb of the leaf. Leaves opposite. Inflorescence terminal, racemose or spicate, bracteated. Bracts small, linear lanceolate. Calyx monosepalous, cut very deeply into five linear, oblong, obtuse segments. Corolla monopetalous; tube short, with a slightly campanulate limb, deeply divided into five oblong, cuneate, erose segments; very dark purple. Stamens five, arising from the mouth of the tube of the corolla, erect, dark purple. Anthers oval, blackish purple. Style short, thick, awl-shaped.

A very beautiful, half-hardy herbaceous plant. It is new, and very rare. A soil rich, but moderately light, suits it best. Propagates by division and cuttings; and the protection of a cold frame is all the young plants require in winter. It blooms from the end of June till the end of August.

DIPLOLÆNA DAMPIERI. Desf. Nat. ord., Rutaceæ. Native of the Swan River.—Habit dwarf, shrubby, compact, branching freely. Younger branches covered with dense, short, stellate down. Leaves alternate, oblong, and slightly obovate, entire; younger ones brownish, from close, rusty down, above and below;

older ones scabrous above, and covered below with the same rusty down. Peduncles short, deflexed, solitary, supporting a compact head of flowers. Involucra large, with the leaves arranged in two rows. Florets very numerous, small. Calyx generally of five linear, short sepals. Stamens long, filiform, with the lower half of the filaments red and hairy, and the upper half yellowish. Anthers small, roundish, yellow. Style long, supporting a five-partite stigma.

A small greenhouse shrub, more curious than beautiful, yet possessing sufficient of the latter quality to entitle it to a place among ornamental plants. It has the general appearance of a *Correa*, and requires the same treatment as that genus. Turfy loam and peat, with a good portion of sand, a very free drainage, and a light airy atmosphere, are its principal requirements. Blooms in autumn, and sometimes also in spring.

THOMASIA STIPULACEA. *Lindl.* Nat. ord., *Byttneriaceæ*. Native of New Holland.—Habit compact, bushy, about three feet high. Branches moderately strong, round, downy. Petioles short. Leaves large, cordate, angled, and somewhat toothed; downy. Stipules large, foliaceous, broad, sometimes trifid. Racemes somewhat panicled, produced opposite the leaves. Flowers large, bracteated. Calyx rotate, slightly plaited, divided into five lobes, covered externally with pilose hairs. Stamens ten, five of which are fertile, and the others sterile, all united at the base. Style filiform, smooth.

A very handsome greenhouse shrub, requiring peat and loam (about one-part of the former to two of the latter), with a fair portion of sand. Blooms in the autumn months, and also in spring. Cuttings root with difficulty.—S. G. W.

WINTERING VERBENAS.

I HAVE seen various remarks, in your pages, on keeping the Verbenas through the winter. My plan is as follows, and for several years I have found it successful, though at the same time I never neglect having a stock of young plants, in case of accidents:—When I bed out my Verbenas, at the end of May, I put a dozen or two of the best in pots. These are very ornamental to my flower-stands, during summer, out of doors. I never neglect them—watering, stopping, and shifting them when necessary. At the end of August, I select the healthiest and most promising ones. These are fresh potted in good sandy loam, and in roomy pots: they are cut down pretty close, and are placed on a shelf in the warmest angle of a high, protecting wall. Here they remain, carefully tended, till they are removed to their winter quarters—a room where frost is barely excluded; every flower-bud is removed as it appears, and they become large, bushy plants. Last spring, from six or seven of these, I cut 225 slips, struck them on the Kiddian system, under two hand-glasses, with slight bottom heat—not one failed. In due time they were, with an abundance of root, pricked out in a glazed turf-frame, where they soon became a little forest of sturdy, healthy plants. Some of them are at this moment (January 12) alive and well, in an exposed garden.

Amateur gardeners cannot be sufficiently grateful to Mr. Kidd, and those gentlemen who have simplified the striking of bedding-out plants, though I must think it never succeeds so well as in early spring.

This year, I intend trying Scarlet Geraniums on the same plan, and I have reason to believe it will answer.—QUIS.

COVERING UP FRAMES DURING SEVERE WEATHER.

For some time I have been considering that some better protection ought to be provided than that commonly in use—viz., Russian mats, straw, &c. All practical gardeners are aware of the immense loss of heat, during the night, in severe weather, if the frames and pits are not well secured, and more especially on rainy and windy nights. Now, suppose I cover a pit with mats two or three thick, and the first part of the night it rains, or sleet, and after the middle of the night it clears off, and a sharp frost succeeds, the mats are “wringing” wet; and, in this state, how much frost will they keep out? Why, not so much as one dry one. Well, we must have something waterproof; but what can we have? Will shutters do? No; they are too heavy, and too expensive for general use. I have never seen anything that

answers better than wooden frames, covered with felt, and gas-tarred. Mine are made exactly like the lights, so that they will slide up and down in the lights' places, if required. I had them made in this way, so that they should do instead of lights, when only night protection was required; as, in the case of Potatoes in April and May, when we have frosty nights, but generally fine days, I use the lights on some boxes for Cucumbers, Melons, &c.

The felt can be bought in any town. It is used for covering temporary buildings, and appears to answer very well, if tarred over occasionally. It is 8d. per yard running measure. The width is about two feet eight inches.

My frames are made with red deal: the two sides and two ends are an inch and a half by two inches, with small bars, lengthwise, eight inches apart—exactly the same as if intended for glass, only made lighter. The bars are to keep the felt from dropping; for, strain it as tight as you will, still it will sink down. The bars must not be so thick as the sides, by a quarter of an inch; because, if you want them to keep out very severe frosts, you can turn them upside down, and fill the spaces between the bars with straw, and tack some laths crosswise to keep it in. Now, it will be easily seen, that if the bars were as thick as the sides, the laths would prevent the covers fitting down snugly on the lights.

I have no doubt but it will ultimately be a saving of money to use felt covers instead of mats, as the former will last for many years, if gas-tarred once a-year, and when not in use, put in a dry place. Covers five feet by three feet can be made for 3s. each. Mine cost rather less.—G. R.

CALCEOLARIA FAILURES.

THREE years since, I was much troubled by this plant dying off, and was told by the gardener, who puts on the apron next door to me, “that they always did, and always will, on this hill.” I noticed, at planting time, that aphis were on some of them, but, being then rather busy, I could not stay to give them a dose of tobacco-smoke. Dry weather came on soon after, and I saw the rogues were multiplying exceedingly. But how to get rid of the aphis was a difficulty; I could not destroy them without too much trouble, and not until they had sucked most of the sap from the best of the unfortunates. Consequently, after a first puny flowering, they died off, and I had the miserable fate of seeing a patched-up bed all the season, not having fit plants to fill up.

The next spring, I said, I'll be down on you, aphis, this time. So, about a week before planting-out time, I gave my four-light frame of them a two-ounce dose of tobacco-smoke; then planted some out in beds, and others in a ribbon. They all did well, notwithstanding the dry summer, and I did not have three deaths out of the lot. In the spring of 1858, I again smoked the Calceolarias in our four-light frame, and again they have done right well. But, wanting a few more than the frame would hold, some did not get smoked at all: I took care, however, to keep them to themselves at planting time. Now, in this bed of about forty plants, has occurred more deaths than in all the others from the frame. My neighbour's beds each year have been sadly patched up, especially this last summer; but he says, “they always did and always will.”

In our cases, therefore, I set all down to that rogue—that will feed, if allowed to live—the aphis; but can scarcely fancy it must be the same with your other correspondents, as they must surely have noticed them committing their ravages. I might mention, that ours are now in shallow boxes, two feet by one, about an inch apart, as dibbled in when cuttings. In about a week they will be potted at once into large 48's; then in they go to the four-light frame, and there await smoking. The kind we use most of, is *Aurea floribunda*. I know not whether it be hardier than varieties generally grown, but an exposed ribbon of it stands now in our garden as “hale and hearty” as if it were October.—HOPEFUL.

POTATOES ON GROUND UNMANURED—BOILING POTATOES.

MAY not the Potato disease arise in a great measure from over-manuring, or in consequence of the soil being too damp, or rich? We know that Hops become mildewed when over-manured. A

cottager in this neighbourhood (Ashford) has for the last twenty-five years gone upon the plan of using no manure at all to his Potato crops, and yet he tells me that he has always had fine crops, and never once has had the disease amongst them. He is noted for his Potatoes. He contends that the poorer the soil the better the Potato; this, however, I confess, I do not understand. We have been in the habit of growing our Potatoes on a good loamy soil, and have generally had the disease among them, more or less. Last year, we put no manure on the land, but in lieu of it a quantity of sand: the crop that came off the land thus treated was very fine in size, and excellent in quantity and quality: the Potatoes were beautifully mealy and free from disease, and we never had so large a crop before.

In 1857, at the time of sowing our Potatoes, we tried all sorts of experiments. We put into the ground with them sulphur, charcoal, and lime, separately and in combination, but to no good purpose—the crop was all equally indifferent. I strongly recommend a trial of the plan we adopted last year, in any but a light soil. I feel sure no one will be disappointed.

If the Potato, however, be badly cooked, it matters little whether the soil is rich or poor; whether you do or do not use sand; unless, indeed, the Potato is very first-rate, which now-a-days is seldom the case. Here is a receipt for cooking Potatoes, which was suggested to me by an observant neighbour of mine, and by which an inferior Potato may be rendered mealy.

Pick out your Potatoes, so that the quantity you intend for dinner shall be as near of the same size as possible, and put into the pot with them sufficient water only to reach half, or a third of the way up them: they should never be covered with water. This is a most invaluable, although such a very simple receipt. I have had a square pot made for the Potatoes; for a round pot, since they must not be piled one over the other, would not hold sufficient for any number of persons. In boiling Potatoes for his pigs, which my informant did in a large copper boiler, he had observed that those uppermost, and partially out of the water, however small they might be, were invariably cracked and mealy, while those below were waxy.—C. P. C.

TOADS LIVING WITHOUT AIR—GROWTH OF FLINT STONES.

IN a former paper on toads, I alluded to the fact of their being found alive in the hearts of trees, and even entombed in stones, and hinted that in such cases there might be some small fissures which admitted air. Since then, I have tried the following experiments on some of these harmless reptiles; and, though they were not entirely satisfactory, they went some way in favour of my opinion.

First, I put a toad into each of three small flower-pots, covered over with clay, and over that a thick coat of cement. One of them had no air passage; another a small one, which I gradually reduced during two days, and then sealed up; and the next had an air pipe. After the toads had been buried a week, about two feet in the ground, I found the first one, that had been sealed up at first, dead, and the other two alive. This interment tended to show that toads die when they are suddenly deprived of air. Therefore, I put six others to a more severe trial. I about half-filled six small flower-pots with soft clay, on which I made an impression of a large toad in each one to hold its prisoner, and covered them all over with a much thicker coat of cement. Three of them were covered up at once, two gradually, and the remaining one had air from a pipe above ground, while the six toads in the pots were under it a full month. When dug up, four of the pots contained the remains of dead toads: the toads in the other two were alive. One of these had the air-pipe; the other happened to be a small one, and, of course, he had more room than his dead companions. I should observe, that these were not injured from pressure, for they were defended with pieces of pots, under which they seemed easy until I began to shut them up about the middle of November.

What I have stated is not favourable to the common belief of toads living for centuries in air-tight cavities. For instance, in the *Literary Gazette*, I read an account, said to be perfectly well authenticated, of a large toad found in a round flint stone, which was broken, and the toad came out. He was in a hollow exactly the size of his body. It occurred at Blois, in France. The flint weighed fourteen pounds, and was found a yard deep, on digging a well. The French Academy of Science had the stone brought

before them, with the toad in it. They pronounced it an authentic case, but did not attempt to explain it. This happened in 1851.

For the sake of further inquiries into such interesting cases, I offer the following opinion concerning this French one. Perhaps the impression of the toad was made in the stone many centuries back: its body in the chalk was a nucleus for the silex to adhere to; in fact, it was the beginning, or the cause, of the growth of a flint stone. When this was broken, there happened to be a live toad under it; consequently, the workmen believed that it came out of the stone, especially as the toad fitted the impression.

I need hardly observe, that this is contrary to the belief of those who examined the stone. It seems difficult, however, to decide on which side the truth is. But the fact of the impression of the toad in it tends to show that flint was formed in the chalk above the level of the sea; whereas it is generally considered that marine animals had been the nucleus of flint stones—such as sponges, *echinidae*, or sea hedgehog, &c. Perhaps the remains of these retained their crystallising power in the top of the lime deposits of the sea, while those below, being of a much earlier period, lost it. There being few or no flint stones at the bottom of chalk pits, favours this theory.—J. WIGHTON.

TO CORRESPONDENTS.

PORTABLE HOOTHUSES (*A Subscriber*).—We forwarded your note to Mr. Beaton. Glazing on the rafter has been long practised.

CYCLAMEN VERNUM (*J. F. A.*).—If the flowers of this Cyclamen are all purple, with a deeper-coloured eye, there can be no question about its being the true and veritable *Cyclamen vernum*. The leaf is the same, in looks, as that of several seedling *Persicums* in our collection. The flowers of *vernun* being also very different in shape from those of *Persicum*, our correspondent (*J. F. A.*) would not confound the two, even if he had a purplish, early-blooming *Persicum*. Mr. Beaton will be very glad to have this Cyclamen for the Experimental; also, the plant which looks like the Cossack Grass, and which he believes is not in cultivation. It is far wide of being a grass, however. Can anyone tell the name of the "Spanish Grass," which is so much used instead of wire, in making bouquets in Paris?

DWARF ROCKET (*Rusticus*).—The dwarf Rocket does not come from seeds, and the way to keep it, is, to renew it every year by cuttings. It is a most difficult plant to do well when the soil does not suit it. We have had it doing as freely as a weed, and, keeping a few plants from flowering, we could divide them, in spring or autumn, and depend upon them; and in another part of the country we were most completely beaten by it; for do it how we would, it would not do; and we have not seen a plant of it in bloom for the last ten years, and then it was at the Pine Apple Nursery, Edgware Road, London. Perhaps Mr. Arthur Henderson knows more about it than all the gardeners put together. Just try him, and go by what he says.

NAME OF ORCHID (*E. M' Morland*).—It is *Odontoglossum Bicotoneense*.

LIQUID MANURE (*Kate*).—Sheep's dung collected now, and kept cool as well as dry, may be preserved a long time without losing its strength. Twelve hours is time enough for it to remain steeping in water, for forming liquid manure for your pot plants. Put a pound of it into two gallons, stir frequently, let it settle, then strain, and use it without any further addition. Two moderately-sized plants of *Dielytra spectabilis* are enough for your No. 2 pots. We have only one plant in the same-sized pots, but they are old plants. Put them under cover, and keep them there until in a state of growth fit for the outside of your drawing-room window. We hope this is sheltered, otherwise high winds will break the plants.

LAUREL-DESTROYING GRUBS.—We believe that the small grubs which eat the alburnum in circles round the branches of the common Laurel, and so kill them, are the caterpillars of the pretty little moth, *Dasysera* (*Ecphora*, of Latr.), *Olivella* or *Sulphurella*, the Yellow Under-winged Tinea, which appears in the perfect state in the spring.—J. O. W.

CHURN (*J. S. L.*).—We can recommend *Anthony's Churn*. It is sold by Messrs. Burgess and Key, Newgate Street.

LIQUID MANURE BARROW (*A Constant Subscriber*).—You will find an engraving of one in our Number 422. It is made by Messrs. Gidney, of East Dereham. As you are in Ireland, you cannot employ a more able chemist than Professor Apjohn, Trinity College, Dublin. Sulphuric acid is the best fixer of ammonia you can use for manure, liquid or solid.

LIQUID MANURE TANK (*A Country Bumpkin*).—We have a circular well, four feet in diameter, and sixteen feet deep. Its sides are formed of bricks, set in cement; a coating of cement also faces the bricks inside, and clay was puddled down behind them as the well was built. The bottom was similarly constructed. It is quite water-tight.

POMEGRANATE BLOSSOM (*An Old Subscriber*).—The Pomegranate, like the Loquat of China, is one of those fruits which deteriorate so much by hothouse, or orchard-house cultivation, that it will not pay for its keep, and our climate is not sufficiently warm for it to ripen on a south wall. Therefore, the Pomegranate is only valued here for its scarlet flowers, and to be grown like Myrtle trees, to stand out about terrace gardens in summer, and to be put out of sight during the winter. The same treatment as a standard, or bush, Rose would need in a pot, will suit the Pomegranate in all respects. It blooms thus in the south of England, as well as it does around Paris.

WALNUT-SHELL DYE (*C. Z.*).—We have been making many inquiries about this, but can obtain no satisfactory information for you. We are

told that the Walnut-shell juice dyes woollen fabrics a permanent buff, without any addition.

EUGENIA UGNI CULTURE (*An Old Friend*).—If we had fine plants of *Eugenia Ugni*, we should prefer keeping them in a cool, airy house, under glass. If turned out, we should prefer a south, south-east, or south-west aspect for them, with a little shading from bright sun at first. Whenever practicable, we would root-prune young Plums and Pears in autumn, as soon as possible, or when the operation could be performed without injuring the fruit. If done early, it would tell on the present coming season. If done now, the growth will be arrested. But the second season must come (1860) before the beneficial results, as to fruiting, will be seen.

VINERY ADJOINING DRAWING-ROOM (*T. C. H.*).—You do not tell us whether your house is a lean-to, or a span-roof, nor anything of its size. If the Vines are growing strong in the raised border in front, it would almost be a pity to disturb them, if Vines are to form a prominent object. There can be no question, however, that if that border, by removing the Vines and its bounding wall, instead of being three feet in height, was only nine inches, or twelve inches, high, or even less, and formed into rough rockwork, for Mosses and Ferns, it would form a more pleasing feature from the drawing-room door, than it does now. We gather that the other side of the passage is also bounded by a brick wall of similar, or greater, height; but, to be seen to the best effect from the drawing-room door, the plants, at least at the side of the passage, should be under the eye, however they may rise to the back, or the farther end. The high brick erection at present existing, which we suppose to be a platform of some sort, may be quite as well for the plants, and might show them off as well from the passage, or the outside of the house, but would not be so pleasing from the drawing-room. If there is plenty of heat from the present fire, and it can be got at easily, why disturb it farther, than, perhaps, to bring one turn of it under the Fern and Moss bed? A low span-roofed house, with a low platform on each side of the central pathway, would look best in such a position. To render it very artistic, you might do away with a set stage, or platform, and place your plants in vases, or baskets.

INK FOR ZINC LABELS (*A. Whittington*).—We have repeatedly published the recipe for this. Buy our Number 501. You will find it there.

PERSPECTIVE (*G. Bourne*).—As you have studied perspective, we do not see how we can make the subject clearer, unless by a number of diagrams, taken from the sister sciences of optics and perspective drawing, and then we might fail to give so clear an idea as the work you have been studying. The plan referred to in Mr. Week's advertisement, is the one usually adopted. Without such mode, it would be impossible to give the front and gable end of a house on one flat surface, as on paper. The angle of the roof may be at once seen, by noting the height at front and back, and the slope between them. The oblique inclination of the roof, will depend on the position of the spectator. To throw an object into perspective, the point of view must be nearer one end than the other. Say, that the house you refer to shows its east end; if the west end were shown, you must be nearer that end, and to show it, the roof must slope in the opposite direction. In perspective, all objects contract and rise as they recede from the eye, and the point of sight. In every perspective picture, there must be a supposed base line, a supposed boundary line parallel to it, and a horizontal line between, at the height of the eye of the spectator. On that horizontal line the point of view is fixed, in a direct line, with a perpendicular subtended, from the centre of the base line, if the picture is to be taken from the centre, and just so far removed right or left as we wish to avail ourselves of perspective. From the base of the line opposite the point of sight, and the corner of the base line, two lines drawn diagonally will meet in the vanishing point; and in such sloping line from the base, objects will seem to rise as they recede from view. Place a common chair, on a sunny day, at a number of yards distant from the point of view, a little to one side,—the horizontal line higher than the top of the chair,—an angle of the seat of the chair being next to you, and you will find, that, to be thrown into perspective, not one foot would be at the same distance from the base line as another, and the rays from each would rise on each side to the vanishing point, just as the end of the hothouses referred to. On the same principle it is, that if you look a little obliquely at an avenue of trees, you will see the distance between them apparent enough at one end; but at a certain distance, the avenue will terminate in a point, like the top of a triangle, the first near view reminding you of its base. On large festival occasions, you can see the tables at the near end perfectly well, and could recognise friends sitting there, if there happened to be such; but the farther end draws to a point, and there you could perceive nothing but something resembling heads or bonnets.

DISEASED CAMELLIA LEAVES (*Tuickenham*).—One leaf shows the plant has had a check, and a burning by the sun, whilst the leaves were rather damp. Sometimes it is caused by the plants standing too long out in the autumn, and allowing the roots to be thoroughly soaked or chilled. The other leaf, with a withered spot, looks like a burn, through a spot on the glass, or the dropping of iron rust on it, and the bright sun succeeding. A spot, or score, in the glass roof will produce both appearances, especially the last.

USING A ROOM FOR PLANT GROWING (*A Complete Novice*).—You will find much in "Window Gardening for the Many" to suit you thoroughly. Your room is about as good as old conservatories, with light only in front. You could keep many things in the back of your room in winter; but there would not be sufficient light to grow them well. Large Myrtles, and even Camellias, would stand there very well in winter, and so would Fuchsias, and old Scarlet Geraniums. Healthy, free growth would only be secured for about half the depth of the room; but, provided the plants in front were not high, the aquarium and Wardian case might be placed there in summer. In winter they should be nearer the window. In using gas, be careful that there is a pipe to take it from the burner, or the plants will soon suffer. We noticed a large flower-vase close to the fireplace. Get it more in the centre of the room, if not nearer the window. Remember that light is even more important to growing plants, than heat. We fear climbers would obstruct too much light, if grown inside, especially if allowed to be green in winter. A Maurandy would do as well as any plant.

NAMES OF APPLES (*J. R. R., Hull*).—No. 2 is *Kedleston Pippin*, but we do not know any of the others. Certain it is, that No. 1 is not *Margil*. No. 3 is very like *Franklin's Golden Pippin*. The baker we do not recognise.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakey.
FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.
FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.
FEBRUARY 23rd and 24th. BOLTON POULTRY, PIGEON, AND CANARY SHOW. Secs. William Chester and Robert Greenhalgh, Bolton. Entries close February 17th.
MAY 25th and 26th. BEVERLEY. Sec., Francis Calvert, Surgeon, &c.
JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Pitman, Esq.
N.B.—Secretaries will oblige us by sending early copies of their lists.

LIVERPOOL POULTRY SHOW.

Spanish is the first of the classes commanding our notice. Mr. Botham's pen was perfect; Mrs. Hall's took second, from the natural merit of the birds, and in spite of their lack of condition as compared with others; Miss Rake was third. The winners in this class may subscribe to the truth of the old adage, that "Beauty unadorned, is adorned the most." Capt. Hornby would not be beaten on his own ground: he won with a splendid pen of old birds, followed by two well-known names—Mr. Wakefield and the Hon. W. Vernon. All these birds were of the highest merit. Indeed, in all the classes it will be seen, none but the best birds competed, and the Liverpool Show retained its old reputation of the winners' trysting place.

We were glad to see a large entry for the *Silver Grey Dorkings*, and still more to see the Rev. John Hill the first-prize taker. His name is identified with the colour, and they were faultless. They were immediately claimed. Mr. Ruttlidge was second, and the Hon. W. Vernon again third. Several other pens were very good in all but colour. It must not be forgotten, a premium is here offered for feather, and any deviation is fatal; thus, several had white spots on the breasts of the cocks, and one had white in his tail.

It was an amazing class of adult *Cochin-Chinas*: Mr. Tomlinson's victory was nevertheless an easy one. He showed the birds that won at Birmingham and the Crystal Palace. Mr. Ashton took second and third. There were four high commendations; and it would be unfair not to notice two hens shown by Mr. Fowler. Mr. Stretch's birds were also very excellent. The *Grouse* and *Partridge* deserved eulogium; and all these classes were of more than average merit. In *Whites*, Mr. Chase was obliged to give way to Mr. Capple.

It is hardly necessary to say, the *Golden-pencilled Hamburgs* were most excellent: they always are at Liverpool. Mr. W. Worrall took first, Mr. Carter second, and the Rev. T. L. Fellowes third. These were probably three of the best pens ever seen. Mr. Archer was first and second for *Silver-pencilled*, although Mr. Sutherland showed an excellent pen, which took third. There was a wag at the Show, who said, on looking at the two last classes, that Messrs. Worrall and Archer were the two precious metals—one was gold, the other silver. No one will be surprised to hear, that, in the country of the Moonies, the *Spangled Hamburgs* were strong; and the Committee were careful to place all Hamburgs in good lights. Mr. Banks took first and second for *Golden*, and Mr. Ruttlidge third. In *Silver*, Mr. Teebay was first, the Rev. T. L. Fellowes second, and Mr. Pierce third. We have not before seen as good classes during the present season; and the breeds are so well understood, that faulty pens do not come in to help the Judges. It is a trial of strength against strength.

The same remarks hold good of the *Game* classes, and the entries for *Black-breasted Reds* were large. The struggle was an arduous one, and ended in favour of Captain Hornby, Mr. G. Moss, and Mr. Arnold. There were, besides, seven high commendations in this class. Captain Hornby's was a pen of unusual merit, but it was close run by Mr. Moss. Mr. Hindson was victorious for *Duckwings*; here, again, Mr. Moss was second, and Mr. Wright third. We have seldom seen so many true-feathered birds in one class. The *Whites* and *Piles* are always the weakest numerically, but there is a marked improvement in the former. All the prize birds were good, especially the first-prize pen.

Game Bantams were, as usual, beautiful; and an otherwise good pen was disqualified from one of the hens having been dubbed, and a single comb made from a double. It was a severe contest for the prizes, and ended in favour of Mr. G. Moss and Mr. Ashton. Four pens were highly commended, and it was hard

so good a pen as that belonging to Mr. M. N. de Rothschild should have no more. The *Gold-laced Bantams* afforded an easy victory to Mr. Punchard, and the pen also received the silver cup. Mr. H. D. Bayley second. Mr. Bellyeald was first for *Silvers*, and Mr. H. D. Bayley second. Mr. Titterton and Mr. Percival were successful for *Blacks* and *Whites*.

We were again pleased to see the name of Worrall in the *Rouen Duck* list, and it took a place it was always used to—first and cup. Mr. Fowler deserved the second. A familiar name (Mrs. Seamons) was at the head of the *Aylesburys*, and Mr. Abbott second. The birds shown in this class were, we think, among the largest we have ever seen. Mr. H. D. Bailey gained first, for some very good brown *Call Ducks*, and Mr. Earle second, for *Buenos Ayrean*.

Mr. Ballance occupied a position among *Malay* exhibitors which must be familiar to him. Mrs. Robinson first, for *Andalusians*; Mr. John Robinson, for *White Dorkings*.

The *Brahma Pootras* were very good. Messrs. Fowler and Tecbay were, as usual, successful. Where was Mr. Botham?

Mr. Dixon swept the *Poland* classes, save in *Silvers*, where he was beaten by Colonel Clowes.

There was a good class of *Black Hamburgs*. Mr. Henshall was victorious. Mr. Archer was sole competitor for *Cross-breeds*, and, as might be supposed, they had a strong cross of Silver-pencilled Hamburgs in them.

The *Spanish Cocks* mustered well, and the Birmingham decision was supported; Mr. Hyde's cock, claimed, we believe, of Mr. Moore, of Hanley Castle, at Birmingham, was again first over good birds. Miss Rake was second. The *Coloured Dorkings* were very good, especially Mr. Kearney's; but there were some of the most eccentric Silver Grey Cocks in that class we ever saw. The *Cochin Cocks* added to the laurels of Messrs. Chase and Stretch. The two precious metals, before alluded to, were at the head of the Gold and Silver. Mr. Worrall also won with Golden-spangled; Mr. Dixon in Silver, and Messrs. Dixon and Ray in Polands. There was a great struggle for single *Game Bantam Cocks*. Mr. Stansfield was first, Mr. W. Worrall, second. All these single cocks were perfect birds.

Now for the great class.—*One Hundred Game Cocks*, at £1 each entry. The first prize went to Sir Pyers Mosty, second to Mr. G. Moss, third to Mr. H. Worrall, fourth to Mr. G. Moss, and fifth to Mr. T. Burgess, jun. Two of the five went to new names. It might be interesting to some of our readers, to hear the details of judging such a class. The time occupied was two hours and a half. The number of birds good enough to require careful handling was thirty-six, and some went four or five times through the process. The victory of Sir Pyers Mostyn is unparalleled: with one entry, and little idea of winning, he defeated all the best breeders of Game fowls in England. It is impossible to over-rate the merits of the successful birds. Mr. Moss's were perfect. For beauty of plumage, and union of all essential points, the Duck-winged of Mr. H. Worrall was a remarkable bird. Mr. Burgess's bird was a noble specimen. It was grievous to give such birds as 314, 315, 316, and 317, belonging to Capt. Hornby and the Hon. W. Vernon, only high commendations; but there was nothing more to give. There were twenty-six high commendations, and eight commendations. The first-prize bird was immediately claimed at £10. Thus he will retain £50, instead of himself, from Liverpool.

The Judges were the Rev. R. Pulleine and Mr. Baily.

THE BRAHMA CONTROVERSY.

WHAT nonsense persons who have a hobby contrive to promulgate, even risking the axioms of common-sense in order to support a theory handed over to them, and of which they know just as much as they do of Barnum's woolly horse. Your correspondent ALPHA, as indeed yourselves, have indicated the strain of these Brahmas. You have gone quite deep enough, when stopping with Malay and Cochin. I will just put you in possession of a wrinkle. Some years since, I kept a few very beautiful white Malays. Two cocks ran with some buff Cochins, at an off farm, and the cross produced some very dark grey Brahmas: one young stag was kept, with a pea comb. He bred some good Brahmas, but met with an accident, when he, with all his progeny, was killed for the market, no reserve being placed on them. I found that the white Malay, with a buff Cochin, produced whites, buffs, blacks, and Brahmas—the cross as above indicated. To raise grey birds, is not particularly a property of

the Malay; indeed, any white bird, with a Cochin, will breed the above colours. My only object in endorsing your statement, is, to pronounce my experience as to the truthfulness of your opinion.—W. H., Exeter.

THE remarks which you made a few weeks back, in "Our Letter Box," has again started the controversy, whether Brahmas are a variety of Cochins, or a distinct breed, or whether the first birds were brought from the banks of the Brahma Pootra River. At present, I will not touch upon these questions, but will make a few observations in answer to "SALOP," and others.

I agree with "ALPHA," that the so-called Brahmas, which have recently been exhibited and taken prizes, are very different from the handsome, well-shaped birds exhibited by Dr. Gwynne, in 1854. And further, can any one say, that they ever saw such birds amongst those that were imported from the United States during the years 1854 and 1855? or did our early supporters of Poultry Shows, and first introducers of Brahmas—viz., the Prince Consort, Dr. Gwynne, Mr. Davis, Mr. Fairlie, Mr. Fox, Miss Watts, Rev. Mr. Thrusby, Mr. Shackle, &c.—ever possess such dark birds, and call them Brahmas? I say that they did not.

I made a careful examination of all the pens of Brahmas at the Crystal Palace Show, and I came to the conclusion that pen 442 were what I should call Brahmas. They were most like what Dr. Gwynne showed in 1854, and they were also most like the pens of Brahmas exhibited at the Birmingham, Metropolitan, and Surrey Gardens Shows, during 1854 and 1855. The pen of birds just mentioned were not perfection. One hen was very good, the other was ill. The cock, as regards shape, &c., was a fine bird; but, as to plumage, the neck hackle was rather too light in colour.

We may truly say, what revolutions take place in affairs in a short time! Some of the present exhibitors of the dark birds called Brahmas, were dead against them in 1854. Now they turn round, and exhibit something of their own, and call them Brahmas.

Although I have not publicly appeared in the poultry world for the last three years, I have been watching the quiet and steady progress it has been making. I have a great admiration for poultry, more particulary for the Brahmas: I must confess—

"With all their faults I love them still,"

and hope yet to see them universal favourites.—A. B. C.

PROLONGED INFLUENCE OF THE MALE BIRD.

ANOTHER instance of the enduring influence of the male bird, that has come under my notice, was with a Game cock, that got by chance along with some Silver-spangled Hamburg hens. At the latter end of January, he was amongst them, at different times, for three or four days, or perhaps more; for, there being a quantity of shrubs about the place, he was not noticed immediately; and the cock belonging to them being unwell,—not finished moulting,—would mope by himself, and take no notice of the hens or cock either. But, as soon as it was found out, the Game cock was sent away. The hens were all looking blooming and well, and it was near a month before their own cock got well, and began to go about with them. They all began laying before the end of March, and continued till the end of May, before there were any eggs put to sit; the eggs not being taken from one hen, but out of a basket, mixed as they came, after being gathered from the nests. The result was, that more of the chickens partook of the characteristics of the Game cock, than of the Hamburg. There was no other cock ever about the place after the end of January, but the one belonging to the hens.—WORCESTER.

NURSING LATE CHICKENS.

SOME poultry-keepers are fortunate enough to have two or three runs, so that they can separate the chickens according to age and sex. I have only one. I have deplored the loss of many chicks, when their mothers have left them, by the cruelty of those larger and stronger than themselves—nothing vexes me more. Last year, I determined to try an experiment, which answered so satisfactorily, that others may like to do the same.

When the mother is about to leave her brood, and the young are quite unequal to run the gauntlet of the yard, at roosting time I take three or four of them, and slip them under the wings of a hen, on the nest, who wants to sit. I have found she clucks to them immediately. If she does not leave the nest with them in the morning, I repeat the same at night, and from that time the little ones have a more devoted, unselfish friend, than their own mother has become, whom jealousy prompts to be more attentive than she otherwise would. The last instance in my experience is this. In the autumn, a Dorking hen stole a nest, and at the end of September walked off with thirteen chickens. I felt sure I should never rear half, as I had no warm, sunny shed to keep them in. A Cochin hen wanted to sit, and I gave some of them to her in the manner described. When they were about three weeks old, the strong ones roosted with the mother: the weakly ones took to the Cochin. To this day, she is kind and attentive to them, never finding a delicate morsel without calling them to partake of it. I can only answer, however, for Cochin and Dorking fowls accepting the office of foster-mother.—*Quis.*

ATTACHMENT OF THE HOUSE MARTIN TO ITS YOUNG.

SOME few years ago, a pair of martins built their nest under the eaves of a public-house, in the Military Road, Canterbury. One of the window-shutters of the upper room was fastened back, and the lower part of the nest was plastered against the upper part of it, and projected an inch or two over the panel. I had frequently watched the old birds pay great attention to their offspring; for I lived, at the time of which I speak, exactly opposite the house in question. The previous night had been very boisterous, and when I looked out of my bedroom window in the morning, the window-shutter had broken away from the fastening, and the fragments of the nest and the callous young were lying on the footpath. The landlady of the house came out, picked the young birds up, uninjured by the fall, put them into a basket with some hay, and nailed the basket to the wall, as nearly as possible in the place of the original nest, and the old birds continued to feed the young ones as regularly as though no accident had happened to their domicile. When the young birds were fledged, they flew away, and, I suppose, went to spend their Christmas in a much more genial latitude.—W. BRENT, 2, Military Road, Canterbury.

POINTS OF BELGIAN CANARIES.

MR. THOS. RIDLEY, in THE COTTAGE GARDENER of January 4th, 1859, desires to know where I get my law, or rule, for asserting that the Belgian Canary should be straight and erect, and not hooped, or forming part of a circle? I am quite willing to inform him. I got it among the fanciers and breeders of that variety of Canary on the Continent. And I have been much puzzled to know why the English fanciers have adopted one of the ugliest shapes for beauty. There is no accounting for tastes. I can only conjecture, that, as the Continental fanciers are very choice of their best birds, the majority of those imported were inferior, or hooped, and that English fanciers, knowing no better, took it for a good point. I was much disappointed with the Belgian and German Canaries at the Crystal Palace Show.—B. P. BRENT.

PIGEONS.

POINTS OF THE VARIETIES IN ACCORDANCE WITH THE PROPOSED PRIZE LIST.

First Division. High Fancy Birds (four kinds).

I. THE ENGLISH CARRIER, or *King of Pigeons*.—The five properties may be briefly enumerated as:—1st, wattle; 2nd, eye; 3rd, head; 4th, beak; 5th, length. The varieties should have five classes:—1st, Black; 2nd, Dun; 3rd, Blue; 4th, White; 5th, any other.

In exhibitions, I am of opinion that no class should be given to Horsemen or Dragons, because they are simply inferior Carriers; and it is impossible to define where they cease to be either Dragons, or Horsemen, and become Carriers.

II. THE SHORT-FACED TUMBLER, or *Fairy Queen*.—The five properties are briefly:—1st, head; 2nd, beak; 3rd, eye; 4th,

shape; 5th, colour. The varieties should, at least, have five classes:—1st, the Almond; 2nd, Mottles, and whole colours; 3rd, Baldheaded; 4th, Bearded; 5th, any other variety.

It may be advisable to separate the Mottles from the whole, or self-coloured birds; but an extra class for other varieties should always, I think, be added, in which such as Magpie Tumblers, White-shouldered Tumblers, Helmeted Tumblers, Feather-footed Tumblers, Rollers, and House Tumblers, might be exhibited.

A class for Common or Flying Tumblers is open to the same objections as those for Horsemen and Dragons. The points of the breed are the same. Their colour and markings are all given in the above classes for Short-faced Tumblers; and, as their high flying and tumbling cannot be judged in the show pen, it is impossible to draw the line where the Common Tumbler ends and the Short-faced begins.

III. THE ENGLISH POWTER, or *Jack of Trumps*.—The five properties are (I consider if he has no crop he is not worth the name, so I put it):—1st, crop; 2nd, length: 3rd, slenderness; 4th, carriage; 5th, feather. Varieties, five classes, as follows:—1st, Blue Pieds; 2nd, Black Pied; 3rd, Red Pied; 4th, Yellow Pied; 5th, White, or any other variety.

I am not sure if it would not be better, in first-rate Pigeon Shows, to let the White enjoy the 5th class to themselves, and appoint a 6th for any other variety, as Mealy, quite Black or Blue, Dutch, German, or French, Powters or Croppers; for it is not good to be too exclusive; and though these foreign Croppers are not exactly according to the English fancy, yet they show a marked contrast, which is very striking in many respects.

IV. THE RUNTS, or *Hog, Gog, and Magog*.—The only property on which the Runts seem united, is size: like the Sussex and Surrey fowls, they are esteemed for bulk. Perhaps, therefore, we may say, the first point is weight. The five classes I propose for the varieties are:—1st, Leghorn; 2nd, Spanish; 3rd, Romans; 4th, Scandaroons; 5th, Feather-footed.

It is absolutely necessary that separate classes should be given to these different breeds, as the present plan induces mongrelism. But as each of these breeds have their peculiar properties, I refer the breeders to the descriptions previously given.—B. P. BRENT.

OUR LETTER BOX.

SPANISH FOWLS AT THE CRYSTAL PALACE (*T. Nelson*).—We have consulted our reporter on the subject of your letter. He says:—"I have constantly made public, that if a pen worthy of especial notice is passed over, it is by accident. Every prize pen does not call for separate mention. I do not say Mr. Nelson's are in this predicament—he were deserving pens. But if a report is to be merely a repetition of the prize list, it will only be necessary to reprint that. Neither of the pens of hens was named, nor were all the others. Yet there is no other complaint of the omission. A report is neither an echo of the prize list, nor an advertisement. It is a familiar résumé, conveying an idea of the Show to those who were absent, and treating of the salient points. Having thus answered the complaint, I will add, the omission was accidental, but that it is a thing that will constantly occur."

TRIMMING SPANISH FOWLS (*An Amateur, but not an Exhibitor*).—We have nothing to do with the consistency of Judges, and we consider their task sufficiently arduous, without throwing difficulties in their way. There were two Judges at each place you name. Their decisions are, we believe, generally approved. From inquiry, we are able to state positively, neither the cock in the single class, nor in the chicken prize pen, were trimmed, or in any way altered from their natural state. Many birds were trimmed, both at Liverpool and the Crystal Palace, and they were very properly disqualified.

PIGEONS (*E. G. M.*).—Your Horseman cock sitting upon the Fantail's eggs, probably arises from his having paired with a hen Fantail.—B. P. B.

INFLUENCE OF MALE BIRD (*W. H.*).—You must not depend upon the eggs, though the hen was in moult, and has not laid yet: the male bird objected to her, having been with her a few days previously.

RABBITS (*F. Goshawk*).—No good work concerning them has yet been published.

HEN WITH AFFECTION OF THE HEAD.—"I have a Game hen, which has been taken with an affection of the head. She is always looking in a kind of queer, giddy way, and turns her neck round as if she was always trying to see something above or behind her. Sometimes she falls backwards. Can you tell me what is the matter with her, and whether it can be cured, and how I must treat her? She eats voraciously, but her food does not seem to do her any good. I also wish to know whether you can tell me something about the relative hardness of Gold and Silver Pheasants. I have kept the former. Is there any difference in the feeding and management of the latter, and are they hardy? Might I keep them in pairs, or must there be one cock and several hens? Can you recommend me the best place for getting them?"—NORTH LINCOLN.

[The hen can only be treated by purgatives, castor oil (a table-spoonful every other day), and bleeding from the comb. Feed on oatmeal, soaked with cold water. It is a bad case, but she may recover. The Silver Pheasants are, if anything, harder than the Golden. Their treatment is the same. They may be kept in pairs, and do better than when several hens are kept with one cock. Apply to Mr. Baily, 113, Mount Street, London, W.]

WEEKLY CALENDAR.

Day of M'nth	Day of Week	FEBRUARY 8-14, 1859.	WEATHER NEAR LONDON IN 1858.					Moon R.ands.	Moon's Age.	Clock afterSun	Day of Year.	
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.				
8	Tu	Brachysema latifolia.	30.139-30.005	15-25	E.	—	30 af 7	59 af 4	34 m 11	5	11 28	39
9	W	Brachysema undulatum.	30.065-30.051	40-29	F.	—	28 7	v.	morn.	6	14 30	40
10	Th	QUEEN VICTORIA MARRIED, 1840.	30.100-29.917	38-30	F.	—	26 7	3 4	53 0	3	14 31	41
11	F	Boronia pinnata.	30.037-29.956	35-31	E.	.02	25 7	5 4	19 2	8	14 32	42
12	S	Cytisus filipes.	30.155-30.126	41-38	E.	.03	23 7	6 4	11 3	9	14 31	43
13	SUN	6 SUNDAY AFTER EPIPHANY.	30.166-30.015	44-39	E.	.37	21 7	8 4	52 4	10	14 30	44
14	M	Erica transparens.	29.906-29.775	38-29	N.E.	.18	19 7	10 4	17 5	11	11 28	45

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 44.9° and 31.2°, respectively. The greatest heat, 65°, occurred on the 10th, in 1831; and the lowest cold, 0°, on the 15th, in 1855. During the period 105 days were fine, and on 91 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

THIS should be a busy time in the garden, as a great deal of our success through the ensuing season will depend on the careful and active performance of the routine duties now coming thick upon us. In the open ground, seeds of vegetables should be got in as expeditiously as possible; but, should the weather be wet, it will not do to trample the ground too much. Where there is the convenience, many crops may be sown under cover, and transplanted to the open ground at a more favourable opportunity.

ASPARAGUS.—Give plenty of air to these, and all other crops in frames, and make up fresh beds, if wanted.

BEANS, BROAD.—Sow *Marshall's Prolific*, or *Early Mazagan*, in the open ground, where the soil is sufficiently dry to work well.

CARROTS.—Sow in frames. Thin those already up, and make a small sowing on a warm border.

CAULIFLOWERS.—Plant out from the seed-pans all the young plants, before they become too much crowded; and, if wanted, make a fresh sowing.

CELERY.—Sow *Seymour's Superb White*, in boxes, for the main early crop. It is an excellent sort, grows large, and is not so apt to run to seed as other sorts.

CUCUMBERS.—Make fresh linings, and keep up a steady heat in the beds. Sow seed, for succession crop.

LETTUCES.—As soon as the young plants in boxes are an inch or two high, prick them out on a moderate hot-bed, which will give them strength, so as to be fit for planting on a warm border next month. Sow a crop of *Cos* in frames, and in a warm situation in the open ground. Remove decayed leaves from those in frames, and give plenty of air.

RHUBARB.—Sow seed.

TOMATOES.—Sow in heat, as also *Sweet Basil* and *Sweet Marjoram*.

FRUIT GARDEN.

FRUIT TREES.—Pruning should now be quickly forwarded on wall trees and espaliers, and occasionally on standards, before the trees advance considerably in their blossom-buds. The object should be, to cut out any superabundant, irregular, or improper growths, and all useless, naked, old wood, and to leave a regular supply of well-placed shoots of last summer.

FLOWER GARDEN.

ALPINES.—Look over them, and all other such rare plants in pots; remove all decayed matter, and stir up the surface of the soil. Those which it may be desirable to propagate should be divided into pieces, repotted, and placed again in the frame.

CARNATIONS and PICOTEES.—Any layers that are still attached to the old plants may be taken up and potted, or transplanted singly, or three in a patch, in the borders.

DAHLIAS.—Propagate, if a good stock is required, by putting the old roots in heat; and when the shoots are two or three inches long, they should be potted singly into small pots, and kept growing in a gentle heat. Water must

be given carefully, as too much moisture would be fatal to the young plants.

LOBELIA GRACILIS.—Sow seed. It makes a beautiful blue edging for beds, or rustic baskets.

LAWNS.—Roll frequently, and spread wood ashes where the grass is injured by moss.

RANUNCULUSES.—Plant. The bed should be trenched eighteen inches or two feet deep, and not raised more than four inches above the level of the walks, to retain the moisture more effectually. If well-rotted cowdung is at hand, it should be mixed with the middle portion of the soil; as the earth where the roots are to be planted should be free from dung, which would prove injurious rather than a benefit, if too near them. The surface of the bed should be raked perfectly even and flat, and the roots planted in rows, about six inches from each other. Shallow trenches, about two inches deep, should be made with a little clean, coarse sand, sprinkled along the bottom. The roots should be placed with their claws downwards, from three to four inches asunder, according to their size. When the trench has received its roots, it should be filled up carefully with the same earth that was taken out, so as to cover the root exactly one inch and a half deep, which is the only true depth to procure a good bloom. It is pointed out by nature in a singular manner; for when these roots have been planted too shallow, or too deep, in either case a second root is formed at the proper depth, by which the plant is weakened to such a degree, that it seldom survives a repetition of it.

SALVIA PATENS.—Sow seed. They make better flowering plants raised in this way, than by cuttings.

SHRUBBERRIES.—Regulate them, by tying mis-shapen plants into good forms, pegging down branches to get naked ground covered, and planting a few evergreen trailing plants where such are necessary. It may also be worth while to examine the landscape scenery, to see whether, by taking down a tree here and there, or by lopping a few branches, you cannot let in a distant object or two that may be worth seeing.

WILLIAM KEANE.

KINGSTON NURSERY.

MESSES. JACKSON AND SON.

IN Christmas week—the last week of the old year—they had the first crop of forced Hyacinths in the show conservatory. They pot them as early as they can get them over, and plunge them in the usual way till they show; then remove to 50° to 55°, for a short period, till the blanched looks wear off; then to the hottest end of the Calcutta-house, which is moist, much shaded, and never under 60° at night, and nearer 70°, all these last mild weeks. No. 60-pots are turned over the rising growth, which causes it to rise faster and more to the point. All of the Hyacinths do not come quite right every season, under this tremendous hard forcing—one here and there lags behind. The great secret seems to be, to get the bulbs potted early.

The Chinese Primrose culture in this nursery, is as

follows:—The rule was put, for this article, on the largest plant,—a double red,—and it reached just one yard straight across the pot. Thirty-four inches across were the longest when I had them last measured for report. Thirty inches across are the common run here for all the large plants of the double white Primrose. But the new double white *fimbriata* is much the best bloomer, with the largest flowers, and the strongest constitution; yet it is in such demand in the trade, that, although it originated with them, the Messrs. Jackson have not yet been able to keep old plants of it for specimens. All nurserymen know it by this time, and sell it at sixpence or a shilling more than the plain double white, according to the size of the plants. Here, there is one whole house devoted to these double Primroses, and the best part of the next house. The conservatory is also gay with them, and some huge specimens stand on the north side of a span-roofed cold house, for specimen plants of Azaleas and others.

But I shall begin at the beginning, and take the conservatory, which looks on to the London Road. Every day in the year, that house is gay with flowers. They force on purpose to keep it so all the winter. At the beginning of January, it was full of single and double China Primroses; single and double Hyacinths; nine or ten kinds of Camellias; and the following Heaths—*hyemalis*, *gracilis*, *ramentacea*, and *intermedia*, a kind which seems just like the old *Bowieana*, only that it always blooms in winter. The Epacries which came the earliest were—*delicata*, *ardentissima*, *hyacinthiflora*, *Tauntoniensis*, *impressa*, *impressa alba*, and *densiflora*, a large, light creamy-white kind. The earliest Camellia is always, and in all places, the old *variegata*: it was only one week behind them, at the Experimental Garden; but I have had it as early in bloom as the latter end of November, twenty years back: then *Doncklarii*; *Gillesii*, a good striped; *Lady Hume*, blush; *Mathotti*, a very large dark crimson; *imbricata*, *Hendersonii*, and a few others. On the back wall of this house, are fine trained specimens, up to twelve feet high, and as many across; also, some noble standards, of the same size—*reticulata*, twelve feet; *imbricata*, in a pot, twelve feet; *Lady Hume*, ten feet; and many more.

In 1856 and 57, I travelled 100 miles around London, looking for such Camellias, to cover at once the back wall of a conservatory, and could not find one half the number. I had to get full-grown plants, at from £5 to £15 each, and to cut off one side, just like dressing pea-stakes, so as to get them to fit up against the wall. A report on trained Camellias would then have saved my employer at least £100.

In the same house there was, in bloom, a scarce greenhouse climber, *Brachyceras acuminata*, which remains in bloom three months, in the dead of winter. It is like some scarlet pea-flowering Kennedya, and is best in bloom-bud, for most of the flowers drop soon after getting full open. *Pittosporum Tobira variegata* was very bright; *Daphne indica rubra*, deliciously sweet; and *Rhododendron Falconeri*, five feet high, with seven shoots from the bottom, was no less striking, among a houseful of large, fine-grown plants.

The next house is called the New House; but it is two, if not three, years old. It is a span-roof, seventy-two feet long and nineteen feet wide, and is without a rafter—much in the same way as the new Camellia-house at the Crystal Palace, but without the trussed girder across the roof. The support is a plain purline, from end to end. This is where the large China Azaleas, and many other specimens, are wintered. Here, are match pairs, duplicate matches, and three, five, or seven, huge plants of one kind, so as to get match pairs, and single specimens, out of one kind of plant.

It is in the winter season, that most of the secrets for success at shows is to be seen in such places. Mrs. Lawrence and some gardeners used to say, that specimen plants

should stand apart, so as to enable one to walk round them; but here you could not find a place in all the house to lay down a memorandum book, nor yet room enough for your knife. The largest plants on the stages, which run all round the house, are raised on inverted pots, and smaller plants pass right under them, and all round them, as thick and close as possible:—*Hedera* (*Genetilis*) *fuchsoides*, in full bloom-bud. *Azalea amæna*, the little mite of a thing, is thirty inches and two feet high. Four match Tetrathecas; twenty matches of Azaleas; four or five matches of Epacris, *Statice Holdfordii*, and others of that stamp, all in matches, and all these matches grown from the cuttings, on purpose for exhibition plants.

They sell every plant, no matter how big it is, and fill up from the rising stock, to keep up their own credit at the shows; and in the next house, where the men were then potting, we shall get an insight into how fast they can bring on many kinds, when they are pushed hard. There is a match pair, and an odd one, of *Phymatanthus tricolor*, or old *Geranium tricolor*, from the Cape; and I am quite satisfied that the whole of Europe could not send out three more such plants to match them. It is not altogether their size; but, taking all in all, they are the three finest specimens of the kind, or kindred, that I have ever seen. Recollect, kindred includes all the Pelargoniums, and yet I never saw three other such plants. But, to show the difference, let me say, one could buy this kind from a shilling to five shillings, in the common way, and yet each of the three I name is worth from four to five guineas. Two of them are just two feet across, and twelve inches high above the ball. The soil is little else than peat and sand, as for the stronger Heaths and Epacris; and the third plant is a little larger, the exact measurement being two feet two inches across and fourteen inches high. *Vallota*, alias *Imatophyllum*, three feet across, and two feet high: the seed pods, which are five-angled, show the plant to be much nearer *Vallota* than to *Imatophyllum*. The bed along the centre of this house is full of large specimen plants of Azaleas, Rhododendrons, Camellias, Ferns, and Palms—such as *Cycas revoluta*, *Plectocoma Assamica*, *Livingstonia Borbonica*, *Phænix dactylifera*, and *Cordyline australis*; also, large *Strelitzia regina*, *Dicksonia*, or Tree Fern; *Angiopteris erecta*, the largest Fern; *Asplenium furcatum*, and *Blechnum Corcovadense*—all in and under the same winter treatment as Azaleas and Camellias. So that large Ferns, and noble looking Palms, may be had without stove heat, at any rate.

The paths round this bed are lined on both sides, and all round, with *Eugenia Ugni*, and variegated plants—such as variegated Hydrangeas, *Cineraria maritima*, the frosted silver plant; small, variegated, Orange tree; and *Centaurea argentea*, a most effective plant, completely white. I had no idea of the good effect of—say, one-third of variegated and white-leaved plants, with two-thirds of dark green plants, of the same size, in one continuous row. But so much depends on placing plants on some regular system, that there is no end to the thing.

The next house, No 1, is a continuation of the last: it is kept at from 50° to 55° and 58°. It is forty feet long and nineteen feet wide, and the best stove plants are kept in that winter temperature. Here, *Meyenia erecta* was coming into bloom, a fine, close, bushy plant, three feet by three feet; *Bilbergia zonata vittata*, with leaves four feet long, and two large spikes of bloom, orange and crimson; *Chamaoreea elegans*, the beautiful dwarf Palm, which blooms all the winter, and which grows at the cool end of the Crystal Palace, just as well as in the tropical end; *Euphorbia jacquinifolia*, in bloom; *Aechmeas*, Begonias, *Vriesia splendens*, *Pandanus Javanicus variegatus*, with five principal stems from the pot, and each of them branching into more heads a little higher up, altogether making a splendid specimen, four feet only within the curves of the leaves, and just eight feet by spreading them out; *Aspidistra lurida*, the best of all the variegated

plants, in a pot 18 inches in diameter, four feet through—some of the leaves are three feet long; *Croton variegatum*, one of the next best; *Dracæna terminalis*, ditto; *Hoya carnosa variegata*; *Cissus discolor*; all the fine-leaved Begonias; *Tradescantia discolor vittata*; *Maranta regalis*; *M. lineata alba*; *M. lineata rosea*; *M. zebra*, five to six feet through; *Eranthemum leuconervum*, a true basket suspension plant. These are all fine, variegated stove plants; but a general list of what they here consider the best, in all classes of variegated plants, will be given next week, in aid of Mr. Appleby's list, recently given. I asked for it purposely, as they know all the moves about exhibitions and setting off plants to the best advantage.

The Orchids are particularly well managed here. The Cattleya-house is twenty-two yards long, and holds seven rows of plants on one side and two rows on the other, all fine-grown plants, which were at rest since November, in 60° of heat. They are now beginning to pot them, as they are starting into fresh and early growth. All kinds of Orchids they pot just as they show signs of new growth, and at no other period. I noted a few of the finest plants and kinds—such as *Cattleya lobata*, two feet across; several *C. Mossiae*, ditto; *C. Skinneri*; *C. Wagneri*; *C. crispa*; *C. superba*; and *C. guttata* (shoots of the latter made a growth of twenty-six inches last summer); *C. elegans*; *C. bulbosa*, new; and *C. marginata*. These were all very fine kinds.

All the South American Lælias are under the same roof and treatment as the Cattleyas, and do better that way, as any one might see by the vigour of *L. purpurata*, and *L. Brysiana*, two of the very best; *L. cinnabarinæ*, *L. grandis*, *L. Perrinii*, *L. intermedia*, and such like. But, recollect, this is very different from the treatment of the Mexican Lælias—such as *L. anceps*, which has been in bloom all the winter; *L. autumnalis*, and *L. superbiens*. They are kept much cooler, and with more moisture.

The India, or Calcutta-house, which is sixteen yards long, and span-roofed, has three rows on the side stages, and seven on the centre stage, which is slate, over a tank of rain water, eight yards long, four feet deep, and six feet wide. This tank being mostly above ground, holds at the same temperature as the house, and the water is, therefore, always fit to use. Here are the Vandas, Ærides, Saccolabiums, Phalænopsis, and Miltonias, as green as possible. Here, also, is *Cattleya Aclandæ*, *Sophronitis grandiflora*, *Brassavola Digbiana*, *Dendrobium Cambridgeanum* and *formosum*. The latter made shoots twenty inches long, just double the length of the imported growth. *Oncidium papilio* is also here. The winter treatment is not quite so dry as most people adopt, but the heat is up to 70°, and never below 60° at night; and, with it all, no such plants ever looked better, or made more healthy growth. The very curious *Ataccia cristata* is in that house, and in the hottest part of it. The two Ouvirandas also: the newest of them, *Bernieriana*, has twelve leaves, some of them sixteen inches long, and two inches wide, all lace-like, but not quite so open as those of *fenestrælis*. The latter has just been divided for another crop, and planted in two parts loam and one of peat, with ten inches of water over, and broken oysters on the mould. The *Platycerium stemmaria*, one of the Elk's-horn Ferns, does make real suckers from the roots, as I thought and said, of the same kind at the Clapton Nursery. It is really a fine thing of its kind.

The Mexican-house was gay all this winter, as I had often seen it; and, to save my book, I asked for a list of all they bloomed from November to the end of March, which is given below, and may be useful for those who want a winter display. The following were in bloom at the beginning of January:—*Oncidium augmentatum*, fine, large, yellow, and brown flowers, on long, branching spikes, something in the way of *oblongatum*, but finer; it was then two months in full flower: it is as easy to

manage as *Tom Thumb*, in a moderate temperature of about 50° to 55°. *O. bicolor*, a fine, large yellow; and a new Oncid, with the flowers all yellow and crisp, on branching stems a yard high, and four blooms on every branch, all over the spike. There were also in bloom—two kinds of *Calanthe vestita*, more kinds of *Lycaste Skinneri*, *Lælia anceps* and *autumnalis*, *Odontoglossum pulchellum*, *Tricopilum tortile*, *Leptotes bicolor*, on a block; fine masses of *Cypripedium insigne* and *venustum*, and *Barkeria Skinneri*. Here the little lovely *Cattleya citrina* grows up or down, close to the glass, at the coldest end; and also its mate, *Oncidium bifolium*, in a pot! They are two of the hardiest of the race, but give a world of trouble to some gardeners, who give them stove heat. With fine masses of *Galeandra Devoniana*, I shall merely state, that all the Indian Dendrobiums that I have not mentioned are at rest in this Mexican-house.

The next house is the new one, on the trussed system, thirty-four feet by twenty-two feet, and filled with Rhododendrons from Sikkim and Bhootan, China Azaleas, Berberis, Cupressus, Wellingtonias, Thuja, Cephalotaxus, and a distinct new Juniper, to me, called *pomifera*. All these are of the finest sorts, and merely housed, without heat, to be ready at hand for packing off.

In pits, I saw a novelty—quantities of seedlings of *Pinus Sabiniana*, from English cones; also of *Abies bracteata*; and immense quantities of Lilies, just potted off. And for beds and spring flowers, I noted *Arabis rosea*, a pot gem; *Dianthus pumila*, a very rare thing, a kind like Sweet William, not more than six inches high, of a rich rose colour—I have not heard of it for years; variegated golden-leaf Daisy; *Arabis albida variegata*, a fine rock Alpine; *Alyssum Marschallianum*, yellow, with flowers like a rocket, up the stems, over a foot high; *Pentstemon Wrightii*, from Mexico; *P. Nicholsii*, in the way of *Chelone barbata*; 2,000 seedlings of *Berberis Bealei*, and 800 *B. japonica*, both having ripened the seed here last summer, and both having come up in fourteen days after sowing, while other kinds will not sprout for months. *Koelreuteria paniculata* has also ripened seeds here.

The Heath-houses and pit are brimful of heather, and such bushes in the specimen-house as I never saw on sale. *Elegans* and *depressa*, in pots nineteen inches in diameter; four dozen of pots, fifteen inches ditto; so many in 13-inch pots; one hundred in 9-inch pots; and the great bulk of the more saleable kinds in 48-pots; and among them, or rather on an upper shelf, where the top air is given, scores of *Pleroma elegans*, as healthy as the very Heaths.

The blue and tricolor Tropæolums are still in good demand, and they grow lots of them. The pretty *Primula denticulata* was just coming into bloom, and is in active demand.

Laurustinus is grafted standard high on *Viburnum molle*, a deciduous kind. *Thuja aurea* grafted high on *T. occidentalis*. Eriostemons are grafted on *E. cuspidatus* and on *Correa alba* and *C. rufa*. *Acacia argyrophylla* is as good as silver trees, and is here in plenty. It is the best telling white-leaved plant at the Crystal Palace. *Larix Griffithii*, the Himalayan Larch, grafted on the common Larch, succeeds well. But there is no end to these larger specimens of the finer hardy trees and shrubs,—such as Araucarias, Irish Yews, and one *Taxus pyramidalis*, half-way between the common and Irish Yews; tall standards of variegated Hollies; and the finest Holly of all the true Weeping Hollies, which “weeps” just as much as the Weeping Ash, sweeping the ground with wreaths of coral—no plant is more beautiful than this. Also, Weeping Larch, Weeping Variegated Oak, and Variegated Maple, *Acer negundo*. *Stauntonia latifolia* was killed to the ground by the long winter; but the shoots shot forth from the roots, and now *Stauntonia* is as much in demand as before that

winter. I have one next door to my *nudiflorum*, the best Stauntonia hereabouts; and, in a few years, if I am spared, it will be my model plant to refer to for the right pruning of newly-planted climbers.

D. BEATON.

REMARKS ON EARLY BULB FORCING, MORE ESPECIALLY THE HYACINTH.

ALTHOUGH bulbs, in general, are always admired for their beauty, fragrance, and aptitude for special purposes, yet they must all give place to the Hyacinth, which may fairly be called the monarch of the tribe. I say this without any desire to undervalue Camellias, Azaleas, Roses, &c.; as with such, Hyacinths do not enter into competition. The former fill up huge spaces in conservatories, drawing-rooms, greenhouses, and other places, where size is requisite. Our bulbs are so dainty, that they can be placed in almost any situation without being in the way, and may be enjoyed for months in succession!

I have a most excellent bloom of Hyacinths at this moment (January 20th), and they will continue, with me, until March, as forced bulbs; and when the ladies go to town, they will there be able to enjoy, what I must call, in comparison, retarded Hyacinths, until May or June. The delicious aroma of these flowers, with their various hues of colour, must ever continue to make them indispensable; for who can, by any stretch of the imagination, imagine the advent of any tribe which shall supersede them? They have stood their ground for centuries, and may do so for centuries to come. The only thing I wonder at concerning them is, that a much greater breadth is not planted with them in Holland; in fact, that they are not grown for the million, so that every mechanic's wife, who can spare a shilling, might indulge in half-a-dozen Hyacinths. Surely there are other parts of Holland eligible, besides the neighbourhood of Haarlem.

But I must come now to a few remarks of a practical character. Some years since, I urged the necessity of obtaining these bulbs as soon as they came into the market; and this season I obtained my lot of Mr. Chivas, of Chester, who informed me that mine was the first order he had received, and I have never had roots that forced easier. Now it is certain, that, with regard to their natural habits, a certain length of time must be allowed them under all circumstances. What would, in all probability, be the consequence of obtaining a lot in September, with a desire to have a bloom in November; plunging them at once in a bottom heat of 75°, in a forcing structure? Why, when they commenced growth, most likely it would be foliage alone; and by November, I should expect to see them with foliage nine inches tall, and the flower-bud scarcely peeping in the socket. There can be no doubt that the sweating process the bulbs undergo, in the open ground, during the heat of summer, must exhaust the more watery fluids, in order to concentrate all possible power in the blossom—Nature's end and aim. It is my opinion, that this exhaustion has to be filled anew, before the bulb can make a honest start; in fact, they are governed by the same laws, in the main, which dictate the unfolding of the buds in trees and shrubs in general. Who thinks of forcing a Peach tree, or a Strawberry, by sudden and extreme efforts? and why not so? Because we are assured of a hidden process going on in the interior of the bud, which, as before observed, requires, of necessity, a given time, if the development must be perfect. Thus, good gardeners, the moment their Hyacinths are potted in September, instantly cover them six inches deep with old tan, or cinder ashes, or, if these be not at hand, with soil. Now, the ground heat at that period—say, middle of September—is some 50° to 55°, and this, by the covering, is shut in for a time; so that it will be nearly the end of October before any material decline takes place. Thus, we have

the conditions the bulbs require, only they should be guarded from much rain, especially during the first month.

I would here have the unknowing to understand, that, if it is desirable to force them early, it is of little use introducing them to higher temperatures before the pot is pretty well filled with roots. That there is great demand within the bulb for sap, is sufficiently attested by the fact, that a bulb shall have many fine succulent fibres, like so many sponges, for weeks before the bud fairly appears, the fibres evidently absorbing continually.

Now about their first introduction to heat, and the character of that heat. Mine are always plunged in the front or shady part of a pit, made up expressly for forcing purposes, and containing a bottom heat of 70° to 75°. The fermenting materials are dung and tree leaves, well sweated before introducing to the pit, and the surface is covered with tan. At the front, or shady part, of this pit, the bulbs are introduced; but, as much caution is necessary in order to avoid burning the roots, I must explain how I avoid this. The tan being excavated half the depth of the pots, a thick board is placed beneath, as a non-conductor: another board is placed edgeways between them and the rest of the pit, and the pots set on the first board. They are then covered four inches overhead with very old tan, and as they push their buds through this, they are pulled up and set on the surface. They will by no means endure what is termed "lively" bottom heat: 80° would speedily prove fatal to the young fibres, which, from being of a pearly whiteness, would soon become dingy coloured—the first stage to complete rottenness. From 65° to 70° may be freely employed, but I sometimes risk them at near 75°, which is, indeed, the maximum point. They should by no means be removed from the cold ashes out of doors, to the bottom heat, but should be placed in a warm house for a few days, as a transition state.

I must here observe, that these Hyacinths never receive a drop of water from the moment they are potted until they are removed from the bottom heat: they never need any. Afterwards, however, they are watered liberally, when placed in the houses. Some care is necessary after the bloom-spike arises, as to its ultimate character, which may be modified by circumstances. It is well known, that if the bells are too far apart, the effect of the truss, as a whole, is much diminished. This state we gardeners term "drawn." The development of the bulbs has been hurried too much, amidst a partial deprivation of light. Some kinds are much more liable to this than others, and their treatment must be accordingly. The only remark necessary to make on this point, is, that when they are thus acquiring too much length between the bells, put them at once into a lower temperature, with plenty of light and air: when the reverse, keep them from much light. I have one plant now of *Perruche royale*, which resembles a mop, though fine in colour. No more such wigs for me.

I may now offer a few miscellaneous remarks. I have hitherto been speaking of Hyacinths in pots, to blossom in January and February: as for those required in March and April, they require no forcing, in its strict sense. But what about Hyacinths in glasses? Some people seem to think that these require very different treatment from those in pots; but this is a gross mistake. There is, however, one necessitous difference: they are generally obliged to be subjected to a much drier atmosphere. If required early, they should be obtained early. For the first six weeks, they must be placed under similar conditions to those in pots plunged outdoors—that is, in a mild temperature of about 50° to 55°. Darkness, or at least a partial deprivation of light, during that period, will bring them into very similar condition to those in pots. But we should endeavour to surround the bud with damp air, for this may be accomplished, albeit the air of the room be dry.

In the first place, I recommend a metallic stand, to place the glasses in, with edges, or sides, of three inches in depth, to hold water for evaporation; and this stand, or flat dish, should be kept constantly supplied with water. In order to keep a moist air about the bud, a little moss may be placed over each bulb, the moss dipped in water occasionally, and the water squeezed out. I have tried this moss plan, and found it very useful. And how very complete it would be, to have a glass cover to the bulbs in glasses, which might be made highly ornamental; and, the sides resting within the water-stand, the vapour might be enclosed and the dust excluded. The water in bulb glasses should be changed twice a-week at least, as it soon loses character: but much care should be exercised in not bruising the fibres, which are exceedingly tender. When first introduced, the water should not touch the bulb, but yet be as close as possible, until the roots protrude; indeed, it is questionable whether it is necessary the water should touch them at any time.

Before I conclude, I must notice the great difference in character of growth in the various Hyacinths. Some put up their blossom-spike without foliage; in others, we may have leaves four or five inches in length, and the future blossom skulking at the very bottom of them, as if ashamed to come forth. They generally flower best when the foliage and blossom-bud keep fair pace with each other. The fact is, there are quite three classes of them as to earliness; and to endeavour to force those kinds very early, which flower a month later in Holland, is sailing against wind and tide.

I would strongly advise some of our chief nurserymen to send a man over to Holland, there to remain, from the first blooming Hyacinths to the very last, taking careful practical notes all the time, as to the order of their blooming, and other characters. But it is of no use sending a shopman, or even a traveller: he should be a real gardener,—a man of experience,—one, too, who has been in the habit of forcing them. As to urging that the catalogues are already marked in this way, I would not give a button for them: they seem to be a complete stereotyped affair. There is much to be noted by a practical person, which the catalogue-makers never dreamed of.

The forcing of the Narcissi, Jonquils, Tulips, Crocuses, &c., is so simple, that I have little occasion to allude to them; indeed, their treatment is pretty nearly identical. The old double *Roman* Narcissus is one of the best early things, when the roots are strong, which is about once in seven years: it is a pity but they received higher culture. The *Waterloo* Hyacinth, too, which some years since used to be as big as the largest cricket-ball, and put up four or five spikes, has diminished to half the size. Probably, it was sent over a year too soon.

R. ERRINGTON.

GREENHOUSE PLANTS FROM SEEDS.

"WILL you oblige by giving a list of a few plants that can be grown from seed suitable for the greenhouse, to come in at the various seasons? Also, the time for planting them?"—A REGULAR SUBSCRIBER.

We will make an effort to oblige you, mingling together plants of a passing nature, and those which will be more permanent, though, in general, you must wait longer for the flowering period. If you have nothing but a greenhouse, you will succeed better in raising the seeds, by having a few hand-lights, or a small garden-frame, placed in the one end of the house, with rough cinders, for placing the seed-pots on, or plunging them in. The more regular the temperature is kept, and the more equable the atmosphere, as respects moisture, the better, in general, will the seeds vegetate. If comeatable, sandy loam, and heath soil, with a good portion of fine sand, should be used for sowing in. The pots should be fully half filled with drainage, with some nodules of soil and charcoal

over it; then the rough part of the soil, followed by a layer of finer; and the finest of all on the surface. We prefer watering all the pots thoroughly, and allowing them to drain well for two or three days before sowing, and then covering every sort of seed, according to its size, being careful not to over-cover small seeds. If there is no other help but a glass-case in the greenhouse, from the middle to the end of March will be early enough to commence operations in spring.

ABUTILON STRIATUM.—Keep close and warm after sowing. Prick off as soon as the seedlings are two or three inches in height. Will bloom all the summer and autumn, after the second or third year; after that, should be pruned back to within a few buds of the older wood, every winter or spring. Loam and heath soil. A very striking, beautiful plant.

ACACIA armata, grandis, and pubescens, for specimens; and *Jubilissem* and *Lophanta*, for fine foliage.—The latter class will be nice little plants the second year; and the first class, with many others, will bloom in the second and third season, and are easily kept afterwards, growing in fibry loam and a little heath soil. The seeds should be soaked in warm water—about 130°—for several hours, and the pots be plunged in a hotbed, if possible, until the plants are up. If no hotbed, defer the sowing until April or May.

AGERATUM MEXICANUM.—Seed, sown in April, will give flowering plants in autumn and winter. Cuttings, taken in the beginning of autumn, will bloom in winter and early spring. The colour is pretty blue-lilac, but there is no pleasant scent.

ALONSOA INCISIFOLIA.—Sown in March and April, will bloom in autumn and summer. Cut back in autumn, and preserved over the winter, will bloom in common soil early in spring and summer; or seedlings, raised in July and August, will make fine blooming plants from March and April onwards.

ANOMATHECA CRUENTA.—A little bulb, that may produce a few flowers the first autumn; but most of them will bloom the second summer, and take up little space.

ANAGALLIS Parkensis and *Phillipsii* (fine varieties of this weather-glass plant).—Some will bloom in the end of summer and autumn; but, if saved over the winter, will make fine flowering plants in spring and summer.

BALSAMS.—Sown in March, April, and May, and kept hardy and well aired, will afford a fine display in the summer and autumn months. After the first pricking off, the compost for potting can scarcely be too rich, if sweet and well aired. Stubby growth,—from plenty of cool air round them,—in unison with good feeding, are the main secrets of successful growth.

CALCEOLARIAS.—Both shrubby and herbaceous kinds may thus be freely produced. Sown in March, most will bloom in the summer and autumn. Sown in August, there will be plenty of bloom in April, May, and onwards. Use the slightest covering of sand, or anything of that kind, over the seed; press down, and cover the pot with a square of glass; and, before the seedlings are well up, give what moisture that may be needed from the outside, or bottom, of the pot, instead of from the top or inside. Use light, rich, sandy soil, and, when once growing freely, give plenty of water and plenty of air.

CHOROZEMA.—This is a fine genus, requiring similar, but more particular care, than Acacias. The seedlings being pricked off, potted, stopped, and kept growing, may be expected to bloom the third season.

CINERARIA.—Varieties sown in April will bloom in autumn, being kept in a shady place in the heat of summer. Sown in June and July, and so treated, will bloom in winter, if the greenhouse is warm enough. Sown in September, or a little earlier, will secure fine blooming plants for February, March, April, and May. Cuttings taken in August and September, from plants done blooming, will also bloom well in spring. When bloom is wanted early, use small pots. When fine

specimens are required, shift often, and prevent the roots getting pot-bound, until you have them large enough to flower. These and Calceolarias will make any house very gay for several months in the spring of the year.

CLANTHUS PUNICEUS.—Treat this beautiful plant as you would an Acacia. The red spider is a great enemy to it. It will not bloom until the second or third year.

CLINTONIA PULCHELLA (a beautiful trailing annual).—Sow under a square of glass, and, if kept in doors, let it have room to ramble, and plenty of free air. It is beautiful, hanging round a basket or vase.

CYCLAMENS.—Sow as soon as you can get the seed. If they do not die down the first autumn, let them grow on slowly; and plant them separately the next season, when some may bloom, but all will likely rest in summer. When they begin to push again, they will generally show their flowers.

DATURA CERATOCAULON.—This will require to be sown in the house, and will form a fine feature there in the summer months, though it will thrive in a good warm place out of doors.

CORONILLA GLAUCA.—An old favourite yellow-flowering shrub. Treat as Acacia, steeping the seeds before sowing them.

HUMEA ELEGANS.—Sow in May, in fine soil, in a glass-case, and cover the pot with a square of glass. Prick off carefully when up, repot separately, keep in a warm place in the greenhouse all winter, repot in spring, and, either in the house or out of doors, you will have graceful objects in summer and autumn.

IPOMOPSIS ELEGANS.—A miffy plant, bad to manage. Best sown in a cool place in August, potted off, and kept in an airy part of the greenhouse, and rather dry in winter, when it will bloom in spring and early summer.

ISOTOMA AXILLARIS.—A pretty, small, light blue annual, that, sown in March, will bloom in summer and autumn.

FUCHSIAS.—These should have been mentioned above. Many of them come nearly true to the varieties, but you will be sure to have much diversity. Many, if kept in little space at the roots, will show bloom the first season, and the plants, when done growing, may be safely kept anywhere free from frost.

Ixia.—A class of bulbs that are easily raised from seed. Many will bloom the second season.

KENNEDYA MARRYATTÆ, and many others.—Seeds should be soaked as for Acacias. Water used afterwards, if any, to be warm, before the seedlings appear. Heath soil and loam suit them.

LINUM GRANDIFLORUM.—Soak and wash the seeds before sowing. When seedlings are up, prick off carefully, and either grow in an airy greenhouse, or plant in an open place out of doors.

LOBELIA.—All the larger kinds will bloom the second year, and many in the first, if the seeds are sown in heat. All the low-growing, trailing sorts will bloom a few months after sowing. Sow in March, hardly covered, but a square of glass, shaded, put over the pots. The seedlings will soon want thinning, and will flower profusely, either in-doors, or in a border. If sown in August, and kept in small pots, they will bloom all the winter in a greenhouse; and so will spring-struck and spring-sown ones, if kept stubby, and in little space for growth.

LOPHOSPERMUM Hendersonii, *spectabilis*, &c.—Free-growing climbers. Seedlings the first season do not bloom so freely as plants raised from cuttings. Plants, either struck in autumn, or well shortened back, will bloom freely the following season, either in a cool house or out of doors.

LACHENALIA.—These pretty little bulbs, that bloom so freely in spring and summer, generally flower in the second and third season after seed sowing.

MATURANDYA (purple, rose, pink, &c.).—Sown in March will bloom in autumn. Pruned back before winter, and

secured from frost, they will bloom freely in spring and summer.

MESEMBRYANTHEMUM pomeridianum, *tricolor*, *glabrum*, &c. (pretty succulents).—Pricked out in well-drained, sandy, limy, rubbishy soil, will be very attractive in summer and autumn. Close to the glass, when the sun shines especially.

MIGNONETTE.—Sow in August and September, for spring flowering, and in March and April for fine specimens for summer and autumn.

MIMULUS (florists' varieties), *Musk*.—Sow in spring, for summer and autumn blooming. Sow in autumn, or take cuttings of good kinds, to bloom in spring and early summer. When growing freely, treat them as half aquatics. Keep from much frost, but, unless very cold, give plenty of air.

MYRTLES.—The seed sometimes lies a good while before vegetating. The seed ripens freely out of doors in the southern counties.

NEMOPHILA INSIGNIS.—Sown in the beginning of September, and kept from frost, and much heat in winter, this forms a beautiful trailer, in a cool house in the spring months.

NIEEEMBERGIA (of sorts).—Beautiful, delicate things.

ORNITHOGALUMS.—Pretty little bulbs, that will bloom early the second season, from seed.

OXALIS ROSEA, &c.—May be treated in a similar manner.

PASSIFLORA CÆRULEA, &c.—Treat as for Acacia seed; but, if there is no hotbed, defer sowing until May. The plants may be expected to bloom the third season.

PELARGONIUMS (florists' kinds), *Scarlet Geraniums*.—The treatment has often been given. Keep the plants in small pots, and with only one shoot, until they show bloom, and then select the best. Cut down when ripe, and grow as for approved kinds.

PETUNIAS.—These will all bloom the current year, and cuttings from the best may be taken as soon as proved. Plants, kept over the winter, will bloom from March and April, onwards.

PORTULACAS (a great variety).—Sow in April, and keep moderately warm; and either near the glass in a house, or on a dry, gravelly bed, in an exposed place, they will form striking features on sunny days in summer.

PHLOX DRUMMONDI.—The best varieties of this, sown in March and April, pricked off, and potted separately, make a fine appearance in a cool, airy house, in the autumn.

PRIMULA SINENSIS (different varieties).—Sow in April, prick off, pot separately, and keep rather shaded in summer. These will bloom all the winter. Others, sown in July and August, will bloom freely all the spring, and the beginning of summer.

RHODANTHE MANGLESII (a pretty annual).—Sow in April. Prick off at once into flowering pots, in rich heath soil, and fibry loam, as the roots do not like much moving.

SALPIGLOSSIS.—Fitter, perhaps, for growing out of doors, after the end of May, than remaining in the house.

SALVIAS would do better from cuttings than from seed, with the exception, perhaps, of *Salvia patens*, the beautiful blue.

SCHIZANTHUS (of sorts).—Sown now, will bloom in summer and autumn. Sown in August, and pricked off and potted, they will make gorgeous plants in spring and summer.

SPARAXIS.—Treat as for Ixia, &c.

SOLLYA HETEROPHYLLA.—Seedlings of this pretty blue-flowering, climbing shrub may be expected to bloom in the second and third year.

SPARMANNIA AFRICANA.—A rough-looking old favourite plant. Seedlings will be some time in blooming.

TROXPÆLUM tricolorum and *pentaphyllum*.—Seeds will not bloom until the second season, at the nearest; after that, to be treated as old tubers. *Brachyceras*, *Jarrattii*, and *Moritzianum* may be treated in a similar manner.

Elegans, splendens, minus, and peregrinum may be sown for summer display. *Triomphe de Gand, Lobbianum*, and varieties of that kind, sown in March and April, grown on in pots, and supplied with trellis or branches, will bloom all the winter and spring months, if the greenhouse is not below from 45° to 50°.

VERBENAS.—The pleasure of noting hundreds of these, as they show bloom, is endless. The commonest care is required, though the seedlings will come away all the better with a little heat. The best might be picked out and encouraged with more room, either in the house or out of doors.

I have thus noticed only a few simple things, which, with the assistance of a few Chrysanthemums, &c., would tend to keep a house gay at little cost, save labour. The seeds might average from 6d. a packet. If the want of this correspondent, and others, has not been met, why there must just be a—try again.

R. FISH.

THE CINERARIA.

THERE is no florists' flower so easy to cultivate, as the Cineraria, yet we seldom see it done justice to, or in such perfection as it is possible to grow it. At even the metropolitan exhibitions, the plants are far from being up to the standard of good cultivation. Observe the difference between the collections of this flower and that of the Pelargonium, in regard to the attraction to visitors and general effect. The growers, however, are not altogether to blame for this failure. The Committees of the shows, or whoever has the fixing of the amount of the prizes, are as much, if not more, to blame. They offer seven or ten guineas for the best collection of Pelargoniums; whilst for the Cineraria the best prize is perhaps not more than twenty or, at the utmost, thirty shillings. How can it be expected, that an exhibitor will be at the same care to produce the latter as fine as the former: he merely grows them as a sort of catchpenny, to help to pay his expenses, along with other plants, or, if he is a dealer, to show the new sorts for the sake of getting orders for them. This state of things, in regard to the Cineraria, is to be much regretted; for, if it is well grown and finely bloomed, it is equally as handsome and showy as the Pelargonium. Such being the case, which party is to take the initiative—the growers or the Committees? I should say, let them work contemporaneously. Let them meet, and agree, the one to give good prizes, and the other to exert the utmost skill to deserve them. Then we should see the Cineraria placed in the rank it deserves, and raisers of new kinds would strive more zealously to improve the kinds, in shape, colour, size, and habit. My experience in growing Cinerarias leads me to conclude, that they may be much better grown than we have hitherto seen them. I will, previously to giving my annual list of the most approved new and older varieties, give a few brief hints on the culture of this beautiful and useful flower.

Soil.—The Cineraria requires a light, rich soil, which may be obtained by using the following compost:—The thin top surface of an old sheep pasture, chopped up small, and used in a fresh state; decayed leaf mould; and sandy peat; in equal parts; with about one eighth of hard lumps of decayed cowdung, mixed throughout the whole.

Potting.—This should take place immediately—that is, not later than the beginning of February, and this potting to be the last for blooming plants. I suppose them now to be good plants, in five-inch pots. Shift them into eight, or, at the furthest, ten-inch pots. The balls should be kept entire, excepting, perhaps, a little of the top soil, which should be carefully picked off. Put a layer of the coarsest part of the compost on the top of the drainage, and thrust the lumpy compost hard down between the old ball and the sides of the new pots, covering the ball with some of the finer parts of the fresh soil.

Having finished the potting, place the plants on a thick bed of ashes, under a cold pit, or frame; and, on all favourable occasions, give abundance of air, drawing off the lights every fine day. In this open, though hard-pressed compost, the roots will run prodigiously, and the plants will grow most vigorously, provided water is given freely whenever the soil is dry. In such a state of robust health, the green fly will find a rich pasture, and, if not timely checked and destroyed, will cripple the rising flower-stems and leaves very seriously. Hence, I would advise periodical smokings,—say, every fortnight or three weeks,—to keep these pests down. Should only one flower-stem appear, the grower may either nip it off, in order that more may spring, or allow it to grow on. I have grown a head of bloom on one stem a foot and a half across; but, in such a case, the side shoots did not flower quite so early as the central ones; hence, the finest flowers were over before the grand blaze of bloom appeared.

In the frame, or pit, great care must be constantly exercised in sheltering the plants from frost. This is certainly an annoyance; but this plant thrives so much better in a low, cool temperature, that the little extra trouble of covering up is not to be regarded. Then, with regard to shading, I know no flower that will bear the sun more than the Cineraria. I would only shade for a week or ten days, just before the day of exhibition. If the plants are for decoration only, then remove them into the place they are to ornament, without any shading at all. When in a flowering state, they will take a large supply of water at the roots and over the leaves. The flowers, of course, must not be wetted at all.

Cineraria seed may yet be sown, and seedlings now in their third or fourth leaf may be pricked out in shallow pans or boxes, and potted singly as soon as they require it. With these few remarks, I conclude, with, as I mentioned above, a list of six of the best new varieties, and eighteen carefully selected older varieties:—

Bellissima, white, with azure blue margin, light disc; good form and substance.

Giuglini, white, with violet crimson edging; small dark disc, and fine form. Has received a first-class certificate.

Mrs. Dix, pure white, with carmine-purple edges; dark disc, and fine form and habit. An extra good variety. Has received several prizes as a seedling.

Mrs. Livingstone, large purple, with white ring, dark disc, and compact habit. A good variety.

Perfection, pure white, with rosy carmine edges, small disc; very smooth, fine form, and constant. Has obtained many prizes as a seedling.

Wonderful, bright crimson, white ring, and dark disc; large and fine. Has received several prizes.

7s. 6d. to 10s. 6d. each.

Eighteen selected older varieties, all distinct, and excellent sorts:—

Baroness Rothschild, purple and white.

Beauty of Leamington, dark purple and white.

Brilliant, white and blue.

Crimson Perfection, self.

Fascination, blue self.

Lady Jane Peel, white and rose.

Lord Eversley, purple and white.

Lord Palmerston, purple self.

Lord Palmerston, white and purple.

Lady Gertrude Vaughan, large crimson flower, with white ring.

Miss Labouchere, white and rosy lilac.

Mrs. Coleman, violet purple, and white ring.

Magnum Bonum, bright rosy purple.

Optimum, white, crimson edges.

Optima, white, deep blue edges.

Prince of Wales, white, blue edges, dark blue disc; fine.

Regalia, crimson self.

Sir Charles Napier, intense blue self.

The eighteen for 31s. 6d.

T. APPLEBY.

RURAL DOMESTIC ARCHITECTURE.

DESIGN FOR A CLERGYMAN'S HOUSE.



It has been too often a cause of complaint against our country-houses and villas, that they mar the beauty of the landscape, instead of adding to it; and the reply usually made to such complaints, by those who build them, is, that they prefer spending the money in providing for interior comforts, rather than on external features of decoration.

This would be a valid objection, if it necessarily followed, that a building, to be cheap, must be ugly. But such a notion is a mistaken one; and the object of this design is to show, that, by a judicious arrangement of the commonest materials, a picturesque effect may be produced with little or no additional cost, and without interfering, in the slightest degree, with the interior comforts and conveniences of the building. The house is supposed to be erected of bricks, either red or white, according to the locality, with different coloured bricks introduced in the arches over the windows and bands, as may be seen by referring to the drawing.

Supposing the house to stand at a little distance from the road, with a carriage drive up to it, you enter by a lean-to porch (A) into a lobby (B) five feet wide. On either side of this is the drawing-room (C), with a bay window looking over the lawn, thirteen

feet by fifteen feet, exclusive of the bay; and the dining-room (D), thirteen feet by seventeen feet, with its window looking towards the road. Beyond the lobby is the staircase, and a good hall (F), ten feet by thirteen feet, lighted by a Gothic-headed window; and opening from this is the study, or breakfast-room (E), thirteen feet by eleven feet, with its window looking over the lawn. H is the kitchen, thirteen feet by thirteen feet, separated from the rest of the house by the small lobby (G), from which there is also a door leading to the garden. I is the scullery, ten feet by ten feet. K is the larder, or it might be used for a wine cellar, and the lobby between it and the kitchen would hold a beer-cask. L is the pantry, opening out of the kitchen, which, with (M) the coal-shed, (N) the knife-house, and (O) an open shed for wood, &c., enclose the yard from the rest of the premises.

The first floor contains four bedrooms, and a dressing-room, which might be converted into a small bedroom.

Such a house as this might be built, in a locality where bricks are abundant, for £700, at the most, and would be very suitable for a clergyman, or gentleman, with a small establishment.—CHARLES LUCK, Architect, 16, Essex Street, Strand.

THE STURMER PIPPIN.

MR. ERRINGTON is quite correct in saying, the *Sturmer Pippin* requires a liberal amount of manure. Here (Sturmer Nurseries) the original tree is still standing, as hale and as healthy as it was thirty years back; but it is in a very rich alluvial loam. We have three orchards, where the *Sturmer Pippin* is planted in great numbers. One has a calcareous clay subsoil, and poor: there the trees ripen their wood well; but the fruit is, as he says, of poor texture. The other two orchards are in the valley, close to the source of the Stour River, a rich alluvial loam of great depth: there the fruit is in the greatest perfection. We have now just picked over a heap of the Apples, of about ninety bushels, scarcely a peck of which are not saleable. It is, decidedly, the finest late spring Apple known.—S. DILLISTONE.

SOWING GARDEN SEEDS—THE ONION.

IT is somewhat remarkable, that there should be so much difference in the hardihood of seeds of plants, that are themselves very hardy. This difference is carried so far, that it may fairly be averred, that the seeds of some tropical plants will endure a greater amount of hardship than some indigenous ones, and then vegetate. I do not mean to say, that the plant, when it bursts the seed-vessel, is equally as hardy as the seed. But many seeds of plants, from tropical countries, will germinate, after enduring the changes of wet and dry, heat, cold, and frost; when some of our home-grown ones would be useless. Why this is so, is needless here to inquire; but, allowing it to be so, it behoves us to be careful, and not commit to the earth seeds likely to be injured while the ground is in an unfit state to receive them.

On the other hand, seeds known to be hardy and capable of enduring all the vicissitudes of the season, may often, with advantage, be sown before the time they are likely to vegetate, in order to be ready when that time does come. Of the latter kind is the Onion, than which I know of none more hardy. The main crop of this may, therefore, be sown as early as it can be conveniently got into the ground; for, unless the situation be a wet one, the seed cannot be sown too early in February, if the ground be in good order, and will allow of being trodden upon. It is, therefore, advisable to take advantage of fine, dry weather, and sow the crop at once, taking care, however, that the ground be in what farmers call "good heart;" for though this crop is not one generally called a gross feeder, it likes good living, and roots much deeper than is generally supposed; in fact, in dry weather, it will send its roots downwards full two feet, if the ground be of that depth of good, rich, garden mould.

True to its half-tropical origin, it likes heat and moisture in abundance—the one without the other only leading to disappointment. In districts, therefore, where moisture is not always to be depended upon, let the ground be trenched pretty deeply in the autumn, and a good dressing of manure given; a slight spudding over in the winter, when there is sufficient frost to bear the person doing it; and the seed may be sown as early in February as opportunity offers.

Like most crops, the wider apart the plants are, the larger they get; but there must be some restraint to this. Generally speaking, the crop does best when sown in continuous rows a foot apart; and, being thinned in time, and sufficiently so, there will be ample room for the crop for all purposes, except, perhaps, that of exhibition. But, allowing the latter class their own way, we may say, that the drills for Onion seed ought not to be deep, unless it be sown late in the spring, and there be a danger of dry weather preventing its germination when near the surface. If the seed be good, sow thin, as most of the Onion seed grows; if doubtful, sow thicker; but be sure to thin the crop before the seedlings become lanky and draw each other; and, if that be properly attended to, there will be no harm in sowing a few Radishes over the ground as well, taking care that the latter are thinly scattered.

Of the kind of Onion proper to sow, there is much difference of opinion. Generally speaking, the *Globe* variety is much esteemed; but it does not keep so well as the old *Strasburgh*, or its kindred varieties. One thing, however, it is proper here to say about keeping Onions, that no care can preserve Onions grown on dry, early ground so late in the winter and spring, as those that are grown on a late, cold soil. In the north of England and Scotland, Onions, therefore, keep better than they do near London and further south. The reason is obvious: a bulbous plant, ripening early on a warm, dry soil, is put to rest early in the

autumn, and is accordingly ready to start growth again proportionately soon. Keeping the Onion in a cool place will, in a certain degree, retard this; but it nevertheless is ready to commence growth sooner than it is often wanted to do. This, however, is foreign to the present chapter, but is mentioned to console those who hear of extraordinary large crops in the South, while their own is small and indifferent, but, as stated above, keep better.

It is only necessary to say, further, that the importance of this crop entitles it to the best place in the kitchen garden; but that place all good managers will have allotted to it months ago in the general plan of changed cropping, so often advocated in these pages. The quantity proper to sow depends on the wants of the family; but about one-twelfth part of the cropping ground will be ample.—J. ROBSON.

SELECT FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 283.)

CURRENTS.

Black Grapè. See *Ogden's Black*.

BLACK NAPLES (*New Black*).—Bunches short, but produced in great abundance. Berries larger than any other variety, frequently measuring about three quarters of an inch in diameter. Milder and sweeter than any other black currant, and the best of all the black varieties.

Cerise. See *Cherry*.

CHAMPAGNE (*Pheasant's Eye*; *Couleur de Chair*).—Bunches of medium length. Berries medium sized, pale pink, or flesh coloured, with darker red veins; more acid than Red Dutch.

CHERRY (*Cerise*).—Bunches short. Berries very large, of a deep red colour; more acid than Red Dutch. This is the largest red currant, and comes in early.

COMMON BLACK.—This is very much inferior to Black Naples and Ogden's Black, and not worth cultivation, the bunches and berries being inferior in size to both of those varieties.

Couleur de Chair. See *Champagne*.

Goliath. See *Raby Castle*.

Houghton Castle. See *Raby Castle*.

Jeeves' White. See *White Dutch*.

KNIGHT'S EARLY RED.—The chief merit this variety is supposed to possess, is its greater earliness than the Red Dutch; but the slight advantage it has in this, is lost by its inferiority in other respects.

KNIGHT'S LARGE RED.—Bunches large and long. Berries large, bright red. Does not differ materially from Red Dutch.

KNIGHT'S SWEET RED.—Bunches of medium size. Berries large, paler in colour than Red Dutch, and less acid; but not so sweet as White Dutch.

LA FERTILE.—This variety I have not seen; but, according to Mr. Rivers, it is a large red currant, and "a most prodigious bearer."

LA HATIVE.—This is a new variety, and, like the preceding, of foreign origin; but I have had no opportunity of examining it. Mr. Rivers states, in his catalogue, that it is "a very early red currant, and excellent."

LONG-BUNCHED RED (*Wilmot's Long-bunched Red*).—Bunches very long, sometimes measuring six inches and a half. Berries large, and of a deep red colour. A decided improvement on Red Dutch, and differs also in being somewhat later. It is not unlike Raby Castle.

May's Victoria. See *Raby Castle*.

Morgan's White. See *White Dutch*.

New Black. See *Black Naples*.

New White Dutch. See *White Dutch*.

OGDEN'S BLACK (*Black Grape*).—This is not so large as Black Naples, but considerably better in every respect

than the Common Black. The bush is hardier than that of Black Naples.

Pheasant's Eye. See *Champagne*.

RABY CASTLE (*Houghton Castle*; *May's Victoria*; *Victoria*; *Goliath*).—Bunches longer than those of Red Dutch; berries larger, and of a brighter red, but rather more acid. It is an abundant bearer, and the fruit ripens later, and hangs longer, than any other currant.

RED DUTCH (*Large Red Dutch*; *New Red Dutch*; *Red Grape*).—Bunches from two to three inches long. Berries large, deep red, with a subdued acidity. Superior in every respect to the old Common Red, which is unworthy of cultivation.

Red Grape. See *Red Dutch*.

White Crystal. See *White Dutch*.

WHITE DUTCH (*New White Dutch*; *Jeeves' White*; *Morgan's White*; *White Crystal*; *White Leghorn*; *White Grape*).—The bunches and berries are of the same size as the Red Dutch; but the berries are of a yellowish white, and the skin somewhat transparent. The fruit is very much sweeter, and more agreeable to eat, than the Red variety. It is, therefore, preferred in the dessert, and for wine-making.

White Grape. See *White Dutch*.

White Leghorn. See *White Dutch*.

Wilmot's Long-bunched Red. See *Long-bunched Red*.

LIST OF SELECT CURRENTS.

BLACK.

Black Naples	Long-bunched Red
Ogden's Black	Red Dutch

RED.

Cherry	WHITE.
Knight's Large Red	White Dutch

FIGS.

SYNOPSIS OF FIGS.

I. FRUIT ROUND, ROUNDISH, OR TURBINATE.

§ Skin dark. Flesh red.

Black Bourjassotte	Early Violet
Black Genoa	Malta
Black Ischia	Pregussata
Brown Ischia	

§§ Skin pale.

* Flesh red.

Large White Genoa	White Ischia
Savantine	Yellow Ischia
White Bourjassotte	

** Flesh white.

Angélique	Marseilles
Early White	Raby Castle

II. FRUIT LONG, PYRIFORM, OR OBOVATE.

§ Skin dark. Flesh red.

Black Provence	Brunswick
Bordeaux	Peau dure
Brown Turkey	Violette Grosse

(To be continued.)

CELERY CULTURE AT THE DARTMOOR CONVICT ESTABLISHMENT—SCAB IN THE POTATO.

I NEVER saw anything very extraordinary in the way Celery is grown in this neighbourhood, except at the above establishment, situated about eight miles from Tavistock, in the very heart of Dartmoor, as wild and desolate a tract of country as ever a crow flew over. Yet they manage to grow Celery with

ordinary culture, every season, upwards of three feet long, and large in proportion. I suppose the secret of their success must lay in the soil, which is peat, bog, and decomposed granite sand. I should also remark, that the stalks are quite free from canker, so frequently found when grown in heavy soil.

"Last season, I grew a very good crop of Potatoes, but they were almost unfit for the table, from being so very warty, or, as it is called here, scabby. Can you, or any of your correspondents, give the reason and remedy?"—JAMES NICHOLLS.

[We shall be obliged by any information relative to the Dartmoor mode of Celery culture.

The scab in Potato tubers usually arises from some unfavourable ingredient in the soil. Excess of oxide of iron will occasion it. We have known lime, mixed with the soil, remove the evil. Some varieties of the Potato are more liable to the scab than others.]

THE SCIENCE OF GARDENING.

(Continued from page 277.)

As no seed will germinate unless a certain degree of heat is present, so also does it require that a certain quantity of water be in contact with its outer skin or integument; and this is required, not only to soften this covering, and thus permit the enlargement of the cotyledons (seed lobes) always preceding germination, but also to afford that water to the internal components of the seed, without which the chemical changes necessary for the nutriment of the embryo plant will not take place.

Pure water, or some other liquid of which it is a large constituent, is absolutely necessary: no other fluid will advance germination a single stage. The quantity of water, necessary to be present before germination will proceed, varies much. The seeds of aquatic plants require to be completely and constantly submerged in water; others, natives of dry soils and warm climates, will germinate if merely exposed to a damp atmosphere, of which the Spanish and Horse Chestnut afford ready examples; but the far larger majority of seeds require and germinate most healthily in contact with that degree of moisture which a fertile soil retains only by its chemical and capillary attraction. If the soil be inefficiently drained, and there is, consequently, a superfluity of stagnant water, the seeds either decay without germinating, or germinate unhealthily. This arises neither merely from its keeping them in an ungenial temperature, nor only from the usual tendency of excessive moisture to promote putrefaction; but also because the vegetable decomposing matters, in a soil where water is superabundant, give out carburetted-hydrogen, with acetic and gallic acids—compounds unfavourable to the vegetation of most cultivated plants, whilst the evolution of carbonic acid and ammonia is prevented, which two bodies are beneficial to the embryo plant.

As water is essential to germination, and only a certain quantity is required for its healthy progress, so is it by no means a matter of indifference what matters it holds in solution. Until germination has commenced, no liquid but water, at common temperatures, will pass through the integuments of a seed. So soon as germination has commenced, this power to exclude foreign fluids ceases; but the organs starting into activity, the radicle and the plumule, or young root and stem, are so delicate, that the weakest saline solutions are too acrid and offensive for them. So utterly incapable are the infant roots of imbibing such solutions, that at first they are absolutely dependent, themselves, for their very existence, upon the seed-leaves; and if these be removed, the plant either makes no further advance, or altogether perishes. Many years since, we tried various menstrua, to facilitate the germination of seeds; but, with the exception of those which promoted the decomposition of water, and the consequent more abundant evolution of oxygen, we found none of any efficiency. As to keeping the seeds in saline solutions until they germinated, we never, certainly, carried our experiments so far as that; and shall be most astonished, if any other effect than injury or death to the plant is the consequence. Such has been the result in the Horticultural Society's gardens, where the seeds of *Lupinus Hartwegii* were made to germinate in a weak solution of phosphate of ammonia.

No liquid in which water does not preponderate, will enable a seed moistened with it to germinate; for we have treated Broad Beans, Kidney Beans, and Peas, with pure alcohol (spirit of wine), olive oil, alcohol and water, in equal proportions by

measure, and with a solution of carbonate of ammonia, but in no instance did they germinate.

It may be noted as a warning to those who employ steeps for seed, with the hope of promoting the vigour of the future plant, that they must keep the seed in those steeps a very few hours. In forty-eight hours, if the temperature be 60° or more, putrefaction commences, and germination is weakened, or entirely destroyed.

M. Vogel, of Munich, has published an extended course of experiments upon this subject; and they fully confirm our opinion, that salts, harmless when the plant is of robust and advanced growth, are fatal to it at the time of germination; for he found that seeds germinate, without injury, in carbonate of lime (chalk), carbonate of strontian, litharge, red oxide of lead, phosphate of lead, black oxide of manganese, calomel, and cinnabar. That they germinate feebly in carbonate of magnesia, copper filings, sulphur of antimony, red oxide of mercury, and aqueous solution of iodine. Lastly, that they refused to germinate at all in carbonate of barytes, hydrate of barytes, iodine pulverised and moistened, kermes mineral, golden sulphur of antimony, oxide of bismuth, arseniate of lead, and green oxide of chromium. These are facts which explain the result of practice, that saline manures are generally injurious if applied with the seed, though they may be beneficial if applied long before the seed time, or subsequently, when the plants are of advanced growth.

Nothing is so injurious to a germinating seed as great vicissitudes of temperature and moisture, or a lengthened exposure, to excess, of the latter; in either case, the awakening life of the seed is frequently entirely extinguished. Nothing is more dreaded by the maltster than a sudden check to his germinating Barley; and, as a chill to the incubating egg effectually prevents the formation of a chick, so does a sudden degree of cold often destroy the sprouting seed. To preserve the seeds of our winter crops from such vicissitudes, they may, in clayey soils, be sown beneficially upon, and covered with a thin stratum of, coal ashes: these are an excellent drainage, as well as a good non-conductor of heat.

It affords a warning, too, to those who have to pack seeds for lengthened transport in tropical regions. They cannot be kept too dry, for heat alone will have no influence over their germination; and they should, therefore, be put into small, open, canvass bags, and suspended from the beams of the upper cabins, where a current of air will keep the seeds as free as possible from damp. Close packing, in paper, in boxes, and in tin cases, stowed away in the hot hold of a ship, causes such a heating of the seeds, such an extrication of moisture from them, as is just enough to commence germination; and which, only carried through its first stage, ceases, and then decomposition ensues, which effectually destroys the arousing vitality.

Water being such an essential application to the seed, as well as to the growing plant, it may be observed, further, that the source from whence it comes is by no means immaterial. The best for the gardener's purpose is rain water, preserved in tanks sunk in the earth, and rendered tight by puddling, or bricks, and Parker's cement. To keep these replenished, gutters should run round the eaves of every structure in the garden, and communicate with these tanks. Every 100 cubic inches of rain water contain more than four cubic inches of air, of which more than half are carbonic acid gas, and the remainder nitrogen and oxygen, in the proportion of sixty-two of the former to thirty-eight of the last named.

That a particular proportion of gases is most beneficial when presented to the seeds and roots of plants, in rain water, is shown by the fact, that it contains in solution the gases of the atmosphere from which it is deposited, but in a very different proportion. Thus, the atmosphere contains 21 per cent. of oxygen, and .04 of carbonic acid; but the air extracted from rain water contains from 30 to 32 per cent. of oxygen, and from 11 to 60 per cent. of carbonic acid.

Liebig, from actual experiment on a large scale, states that both rain and snow contain ammonia; and if there be only one-fourth of a grain in each pint of water, the annual deposition from the atmosphere would be more than sufficient, on half an acre of ground, to give all the nitrogen contained in the vegetable albumen of 150 cwt. of Beet Root. Rain water also contains a peculiar organic substance, analogous to the extractive matter and gluten of plants, though differing from them chemically. To this substance Dr. Daubeney has given the name of *Pyrrhine*. Traces of salts and oxides have also been found in rain water; but, compared with all other naturally produced, it is so pure,

and so abounds with the gases beneficial to plants, that none other can equal it for their service. That obtained from ponds or springs often contains matters offensive or deleterious to plants. Those known as hard water, containing in excess salts of lime or magnesia, are invariably prejudicial, and pond water is scarcely less so. If it be stagnant and loaded with vegetable extract, it is even worse than hard spring water. These last named, if obliged to be employed for tender plants, should have a pint of the ammoniacal water of the gas works mixed thoroughly with every sixty gallons, an hour or two before they are used.

If pond-water be clear, and not only not loaded with putrid or mineral matters, but containing *Confervæ*, or other growing aquatic plants, it may then be used very beneficially for the watering of plants. This is ascertained from long experience, and it is explained by the fact, that such water contains an excessive amount of oxygen gas. This excess is greater in proportion to the brightness of the sunshine, and the length of time to which the water has been exposed to it. During such bright weather, the aquatic plants give out oxygen most abundantly. M. Morren found, that in the afternoon of a sunny day, the oxygen in such water amounted to sixty per cent. of the bulk of the air which it contained.—J.

(To be continued.)

NEW AND RARE PLANTS.

SPATHODEA CAMPANULATA (*Bell-flowered Spathodea*).

Called also *Bignonia tulipifera*. Native tree of western tropical Africa. Flowers like bunches of crimson Tulips.—(*Botanical Magazine*, t. 5,091.)

JUANULLOA (?) EXIMIA (*Large-green-flowered Juanulloa*).

It is known in gardens as *Brugmansia eximia*. Sir W. Hooker suspects it to be a hybrid. It partakes of the characteristics of the genera Juanulloa, Datura, and Solandra. The corolla is nearly six inches long, and bright green in colour. It blooms during the summer.—(*Ibid.*, t. 5,092.)

SANSEVIERA CYLINDRICA (*Terete-leaved Bow-string Hemp*).

This has been called *S. Angolensis*, from being a native of Angola, in western Africa. Its fibres there are used in making cordage, called *ifé*. "Experiments recently made with this cordage, prove it to be the strongest and best fitted for deep-sea soundings of any fibre known." The fibres of all the Sansevieras are notoriously strong.—(*Ibid.*, t. 5,093.)

TACHIADENUS CARINATUS (*Keeled Tachiadenus*).

Known also as *Lisianthus carinatus*. Native of Madagascar. Introduced by the Rev. W. Ellis, so favourably known as the author of "Polynesian Researches," and "Three Missionary Visits to Madagascar." We are indebted to him also for "two species of the wonderful *Lace-leaf* of our stoves." Flowers purple, blooming in October. It is a beautiful shrubby plant of the natural order Gentianeæ.—(*Ibid.*, t. 5,094.)

CHRYSANthemum CARINATUM, var. PICTUM (*Painted variety of Keeled Chrysanthemum*).

The species is native of Barbary, and the very beautiful varieties here noticed were sent to Kew in the summer of 1858, by Mr. W. Thomson, of Ipswich. They were raised by Mr. K. Burridge, Lexden Road, Colchester.—(*Ibid.*, t. 5,095.)

RATING THE GREENHOUSES AND OTHER GLASS STRUCTURES OF NURSERYMEN.

WHETHER such structures are liable to be rated to the poor law, has long been a disputed question, and from some recent decisions appears to be as far from being settled as ever.

Mr. Dodwell, a recent litigant upon the point, writes to us as follows:

"To the nurseryman, glass structures are as essential as the lathe is to the turner, or his bench and tools to the carpenter, and common sense would prescribe that each should be subject to the same law and liability. Governed by this sense of injustice, seven years since (in March, 1852) Messrs. Lane and Son, of Great Berkhamsted, Herts, appealed at special sessions against an assessment made upon their structures, on the ground of its

inequality. They proved (1) that tradesmen's fixtures were not rated by the parish of Great Berkhamsted, and (2) that their structures were subject to all the condition of fixtures—they were removable at will, their own property, and liable to be seized for debt like other property. These facts being proved, the assessment was pronounced by the bench to be untenable, and was therefore quashed.

"Influenced by a similar feeling, Messrs. E. S. Dodwell and John Bayley appealed on the 20th of January last, at Oldham, against an assessment made on Bradshaw Gardens, by the parish officers of the township of Tonge, which assessment was exactly ten times in amount that made upon their predecessor, Mr. John Holland. They proved exactly the same facts adduced by the Messrs. Lane and Son; demonstrated by their solicitor, that the assessment was both unequal in the mode in which it was laid, and excessive in amount; and had then to listen to the dogma propounded by the bench,—that 'such structures were subject to be assessed to the poor's-rate exactly as other, or habitable, buildings, and that the assessment laid upon them was not excessive.'"

We think the decision of the Herts magistrates, in the case of Messrs. Lane and Son, was correct, and this is no recently-formed opinion, for we published the following in THE COTTAGE GARDENER, during July, 1851:—

"A nurseryman rents a piece of ground, erects upon it greenhouses, and stocks it thoroughly. The parish then endeavours to rate him to the poor's-rate according to its improved value; and the question has arisen whether this higher rating is admissible. The question was brought before the Winchester bench of magistrates, and was decided by a majority that the higher rating is not maintainable. They held that greenhouses, unlike other buildings erected by tenants in other trades, do not attach to the land, but are always treated in law as fixtures in trade, which are clearly not rateable. What Lord Kenyon stated in *Penton v. Robart* (2 East, 90), is so strongly in support of this view of the case, and is so illumined by that enlightened policy which should influence a decision upon this question, that we offer no excuse for its quotation:—

"'The old cases upon this subject,' said his lordship, leaned to consider as realty (part of the freehold) whatever was annexed to the freehold by the occupier; but in modern times the leaning has always been the other way, in favour of the tenant, in support of the interests of trade, which is become the pillar of the state. What tenant will lay out his money in costly improvements of the land, if he must leave everything behind him which can be said to be annexed to it? Shall it be said that the great gardeners and nurserymen in the neighbourhood of this metropolis, who expend thousands of pounds in the erection of greenhouses, hothouses, &c., are obliged to leave all these things behind them, when it is notorious that they are even permitted to remove trees, or such as are likely to become so, by the thousand, in the necessary course of their trade. If it were otherwise, the very object of their holding would be defeated. This is a description of property divided from the realty.'

"Now, if a greenhouse be property divided from the freehold, it cannot, in the case of a nurseryman, be anything but a part of his fixtures in trade, which, as we have already observed, are clearly not rateable. The bench were not unmindful of the decision in *The Queen v. Haslam* (Justice of the Peace, xv. 24); but they held, though not unanimously, that greenhouses being uniformly treated as part of a nurseryman's fixtures in trade, the present was distinguishable from that case. We should not have mentioned this, but to apprise nurserymen of the mischief that is stirring; for if that mischief fixes upon them, they need not be reminded that it will be a very serious annual charge upon them."

CURE AND PREVENTION OF MILDEW, &c.

As I take in THE COTTAGE GARDENER, I noticed the query and answer, as to "Mildewed Peach Shoots," in this week's paper (January 25th), and with some interest, having experienced, last year, the same trouble. In an orchard-house, the trees in which had borne and were bearing a good crop of fine fruit, I was plagued with red spider on a good many, and mildew on a few, trees. On inquiry for the cure, all the authorities seemed to agree, that sulphur was the antidote to both these pests. I had been puzzled when seeing my father's gardener smearing the pipes in a greenhouse and hothouse, to check mildew on the Grapes. The heat could not be sufficient to sublime the sulphur;

and the only plausible explanation seemed to be, that moisture rising from the smeared hot-water pipes, carried on its shoulders some of the finely-divided particles of sulphur. This would not help me, as I had no hot water pipes. In my sister's orchard-house, she had made trial of the more recently suggested plan, of placing quicklime, sprinkled with flowers of sulphur, and then slaking it. How this acted, I do not quite see, as even here the sulphur could not have been sublimed, and sulphurous acid gas could not, by any possibility, have been given off. This remedy proved a dangerous one, as fine Apricot trees, with withered leaves and seamed young fruit, soon bore melancholy witness. So, then, smearing seeming a clumsy, and evaporation a ticklish, remedy, it seemed well to try for a practical one in solution; and this, unless I am much mistaken, resulted, not only in a solution of the sulphur, but of the problem.

Soluble compounds of sulphur decompose quickly, and are awkward to apply. But I hit upon a more complicated one, which, on being applied to my red-spidered leaves, all but the very-far-gone ones, and all the young shoots, gradually recovered their greenness, and, on other trees, the mildew was arrested. Wanting, then, the confirmation of more experienced authorities, I sent specimens of my compound to two gardening friends, one professional, well known to your columns, the other, an amateur, but with great experience, derived from a number of forcing, green, and orchard-houses. In both cases, the reports were encouraging. I then, through friends, had the privilege of sending specimens to Bowood, Trentham, and Chiswick House, and of receiving a promise that the compound should be tried, and the results communicated in the spring.

Recently, Messrs. Arthur Dickson and Sons, of Chester, having tried it with success, proposed to sell the compound among their customers; and, as I had taken out a patent, and had the apparatus of a large working laboratory at my command, I could at once make the compound in considerable quantity, and, therefore, could at once accept the offer. Messrs. Dickson and Brown, of Manchester, have since undertaken to sell it among their customers; and, to-day, I have received a note from one of the greatest Orchid authorities, stating, "I have found it very valuable for cleaning Orchids and Ferns from scale and thrip."

If the above facts lead you to think that the matter deserves to be thoroughly tested, will you favour me by passing on one of the small boxes sent with this, of the compound called "Gishurst Compound," to Mr. Errington, and placing the other one elsewhere.—GEO. F. WILSON.

[We have placed the "Gishurst Compound" in the hands of parties well qualified to report upon its efficacy, and will report accordingly. Mr. Wilson is the excellent manager of Price's Candle Manufactory, and if his "Compound" is as efficient as he states it to be, he will deserve to be still more highly esteemed by the public.—EDS.]

BEES REPAIRING COMBS IN WINTER.

In reply to "A DEVONSHIRE BEE-KEEPER," he may either apply to Longman and Co., or to myself, for a copy of my book on bees. I may mention, however, that since it was written, I have had more experience respecting those insects, and now could correct, or modify, some statements which it contains, but not on the subject of bees secreting wax, which is the question between us. The fact of bees repairing slight damages to their combs during winter, or, at least, after the usual time of the insects appearing abroad, has given rise to conjectures as to how they obtained the wax. But the mystery is very easily explained. In strong hives there is always an ample supply of wax for slight repairs, amongst the broken remains which sealed up the stores; and even the seals of wax may be taken off the mouths of the cells, with little risk of losing the honey.

The mended parts of the combs vary in colour, according to the materials, which shows that the wax was not an original deposit. I mention this more particularly, as the writer in question gives an instance of what I have stated at page 235, in favour of his belief of bees obtaining wax solely from honey, backed, also, by some other very eminent men. But all that he adduces, when closely sifted, rather tends to show that honey is only the food of bees, which enables them to secrete, or make wax. It is, therefore, in favour of Hunter's theory, of beeswax being "an external secretion of oil." I spoke of this in my previous paper, in Number 536; and may now state, that this view of the case discloses a close analogy between beeswax and animal secretions,

even the wax in the human ear. But, as I mentioned before, and now repeat without the least fear of contradiction, bees eject wax from their mouths like small, frothen crumbs of bread, and not in pellucid scales like that in the pockets under their abdomens. But what comes from the stomach, through the mouth, cannot be a secretion.

The chief point at issue between us, is, either bees collect wax from plants, or secrete it from honey. I have already given my opinion on the latter, and may further observe, that there seems to be no affinity between wax and honey, otherwise the waxy cells must absorb it. I give this, however, with some diffidence, and now notice bees collecting vegetable wax.

I need not repeat my former remarks, especially on their scraping it from the leaves and young shoots of the common Laurel. To this, "A DEVONSHIRE BEE-KEEPER" objects, and considers that the insects are in search of saccharine food, and lick with their proboscis. But, as regards their "licking, not scraping," I refer him to "B. and W." whose views on this subject correspond more with his than mine. He states, that the bees "scrape something of a gummy nature," which I say is wax, and is afterwards clarified in the stomach of the bees by a process perhaps as impossible to explain, as that of the converting sugar into honey in the blossoms of flowers. Honey thus clarified, led me to think it was not so likely to contain wax as common sugar. A mistake may be noticed in my previous paper on this subject, when speaking of wax. It should read "detected," and not "distilled" from honey. But this is of less consequence than being blamed for mistrusting Huber. However, it may be, that good man was blind, or nearly so, and had to take much at second hand.—J. WIGGTON.

POMOLOGICAL SOCIETY'S MEETING.

At a meeting of the British Pomological Society, on Thursday last, Mr. Hogg in the chair, there were six new members elected.

Mr. Davidson, the Secretary, stated, that his time was so much occupied otherwise, that he found he could not give that attention to the duties of his office as would give satisfaction to the Society, and therefore he begged to tender his resignation, which was accepted; but as Mr. Davidson wished to remain in office till the end of the financial year (31st of July), his request was assented to.

Prizes of two guineas and one guinea were awarded for the best and second best collections of six varieties of dessert Pears. The first was gained by Mr. Moorman, of Clapham, and the second by Mr. Cox, of Redleaf.

Several other subjects for examination were brought before the Meeting, of which the most important was, a bunch of *Lady Down's Seedling* Grape, from Mr. Thompson, gardener to the Duke of Buccleugh, Dalkeith Palace. The bunch was ripe in August, and had hung till now, and the stalks were as green and fresh as it was possible for them to be, and the berries plump and very excellent. Dr. Davies, of Pershore, brought a collection of Apples, of which, and other things, a more full report will be given. F. I. Graham, Esq., of Cranford, Middlesex, read a most interesting paper on the Apple fungus; for which a vote of thanks was presented to him. Mr. Graham was requested to allow the paper to be published in the report, to which he consented.

TO CORRESPONDENTS.

PEA STEMS TURNING YELLOW AT THE BOTTOM (*Subscriber*).—Your soil is defective, probably, in moisture and nourishment. If so, mulching on each side the rows, and watering with liquid manure, will remove the evil.

SEEDS OF FERNS (*Kate*).—Mr. Sims, nurseryman, Foot's Cray, Kent, is the most likely person to give you the information you require.

SITTING-ROOM GRATE WITH BOILER (*A Nine Years' Subscriber*).—Such a grate, with boiler for heating a greenhouse, has been made, but we know of no ironfounder who keeps such an arrangement. If we required one, we should have a boiler made of wrought iron, of the size and shape most suited to our grate. Wrought iron does not crack, when violently cooled, by pouring in cold water.

MILDREW ON APPLE TREES (*R. R.*).—Your trees are out of doors, and the soil "nice and dry." It is probable that the mildew arose from stagnant circulation of the sap, owing to the excessive dryness of the last

summer. Try mulching over the roots of the trees during the summer, in a circle, including the whole surface of the soil within a radius of two feet from the stem. Give a bucket or two of water to each tree over the mulch, once a week, or oftener, if the weather continues long dry during that season. Liquid manure will be advantageous. If mildew makes its appearance, try the "Gishurst Compound," so soon as it is advertised.

VARIOUS (*Minie M.*).—We do not comprehend the kind of Box border, from your description. A Box pattern, the edging high enough, an inch thick, in oblong circles, five inches long, and four inches broad, would hold nothing of flowers to be effective, if we understand you. However, as you say, money makes the mare go, and why not a flower border? 2. The flower is a Gentian (*Gentiana campestris*), which will cross with nothing else that we know of. It might with some foreign *Gentiana*. 3. The Heartsease is a most troublesome, and a most out-of-the-way flower to cross. How did you do it? A proper answer will instruct a thousand gardeners; but some of them may know already that it is doubtful if crossing effects any good with flowers which vary much in their seedlings, without crossing, of which the Heartsease and Dahlia are the two best-known samples.

WINTER PEARS FOR A SOUTH WALL (*A Constant Subscriber*).—We recommend you to select the *Winter Nelis* and *Bewré Rance*.

NAME OF ORCHID (*E. M' Morland*).—Upon re-examination, we find that it is *Odontoglossum cariniferum*, and not *O. Bicotone*, as we said last week.

FLOWERS FOR EXHIBITION IN SEPTEMBER (*Black Catton*).—You will be "done for," as surely as the haggis at Burn's festival, if you buy a single or double Dahlia that has been before the public less than three years; and the same with every flower you mention; for, in the first place, who can tell how a new plant is best managed. The whole gardening world can only guess how. But guessing will never catch prizes. The utmost skill that can be gained by a practice over a long lifetime is absolutely necessary, to get a third prize for new Dahlias. Even to have the smallest chance of a tenth-rate prize in them, one would need to grow from twenty to thirty kinds, to risk a prize for six flowers. But try the following:

Dahlias.—Bessy (Turner), Amazon and Lollipop (Holmes), Grand Sultan (Turner), Lord Palmerston (Holmes), Duchess of Wellington (Turner), Yellow Beauty (Turner), Mrs. Wheeler (Wheeler), Salvator Rosa (Niquet), Perfection (Keynes), Eclipse (Wheeler), Meteor (Fellows), and Miss Burdett Coutts (Turner). **Fuchsias**.—Prince Albert, General Williams, and Wonderful, for dark ones; and for light—Duchess of Lancaster, Clio, and Silver Swan. **Scarlet Geraniums**.—Trentham Rose, Tom Thumb, Punch, Commander in Chief, Richmond Gem, Rubens, and Le Titian (white scarlets), Auburn, Henderson, and Wellington Hero. Of other Geraniums, none are to be depended on in September. **Verbenas**.—Defiance, Géant des Batailles, Lord Raglan, General Simpson, Ariosto, Miss Trotter, Lady Palmerston, Mrs. Holford, Purple King, Mrs. Hosier Williams, and Standard Bearer. **Herbaceous Phloxes**.—Princess Alice, Omnitflora compacta, Pauline Defaut, Magnifica, Mazeppa, and Perfection. **Greenhouse Plants**.—*Diplacus grandiflorus*, *Bouvardia longiflora*, *Calosanthus miniat* and *splendens*, *Statice Holdfordi*, *Cassia corymbosa*, *Relhania squarrosa*, and *Vallota purpurea*. But the truth is, there is no greenhouse plant that can be depended on, to be in good condition for a show in September, after the Fuchsias, Scarlet Geraniums, and Japan Lilies. Under good gardeners, and with a large collection of plants, one here and there manages to bring out one or two of the above; but for an amateur, who does not know much about plants, to think that he can take a prize in September, with strictly greenhouse plants, he would need to grow a dozen of each kind. The worst of it is, there are not twelve kinds of greenhouse plants fit for a show, so late in the season. The last of them look poor and seedy at the July shows. The kind of plants for a September show ought to be Gladioluses, in pot, not in cut blooms; shrubby Calceolarias, tall scarlet Lobelias, Lantanas, late Achimenes and Gloxinias, double Petunias, Balsams, Coxcombs, and Hydrangeas.

RIBBON PLANTING (*A Brother Gardener. E. S.*).—This plan is not ribbon planting, but beds planted in contrasting colours, and matching contrasts, to form an expressive name for a new and wide-spread system of planting. We can give no opinion from your description, which we do not quite understand; but send us a rough sketch of the beds, terrace, and lake, with what is already round about. Mark your own way of planting, or what you suggest on the beds; then we shall have a skeleton to study, and we can easily say if all the parts are in the right places. Without a skeleton, we can do nothing that way.

WALL TREES DECAYING (*Young Gardener*).—The lower branches and breastwood of your Peach and Nectarine trees dying, intimate that their roots are defective. Being on sandy soil, and cropping the border, account for this. Mulch over the roots; take care that they are not disturbed by the spade; give water and liquid manure in the summer; and now shorten the top branches. You will probably find the trees break freely lower down, and be, in other respects, more vigorous.

LIQUID MANURE (*A Subscriber, Cheshire*).—You may give the drainage of your stables, &c., to your fruit trees in pots. We do so about once a fortnight throughout their period of growth. You will promote the growth of the Hollies by giving the liquid to them. Do so about once a month, and during rainy weather.

EVERGREEN BEDDING PLANT (*J. M. D.*).—*Mahonia*, or *Berberis aquifolia*, is just the very best evergreen for such a place; and if you will edge it with *Erica herbacea*, you will have bloom from March to the end of May. The two are the easiest to manage of their kinds.

PROPAGATING MOSS ROSES (*T. J.*).—You will do little good with striking Moss Roses from cuttings. Divide the stools, if large, or lay the young shoots now, or in July, or, better still, bud upon the briar—the Manetti, or any other stock. You might also try grafting now. Repot your Camellias, by all means, if they are looking bad. The large pots would not so much hurt them, if the soil were right, and you watered them properly.

PIT FOR FORCING (*Rose*).—If you contemplate forcing early, make a hotbed of sweet fermented matter inside, fully three feet high at back, and two feet in front, beat firm in building: you may have six inches more, which will allow for sinking, and thus give you room for soil and foliage. This will give heat of itself, before you want much for your linings. If you are short of sweet dung, and do not want fruit early, fill to that height with faggots, or clinkers and rough stones, and sow and plant, when, by

means of linings, you get enough of heat in the soil, and atmosphere above it.

RENOVATING VINES (L. E. H. D.).—We expect the roots are either too deep, or starved. Raising, and more nourishment, would be the best cure. You have not said what width, if any, is between the Vine stems and the ground walk, or if you can sacrifice a part of the walk. Suppose you could manage two or three feet in front of these Vine stems, and nearly as high as the uncovered stem, place fine fibry soil for that width against the stems, mixed with a little lime rubbish and broken bones. Surround all from the end of February until the middle of May, with some hot dung and leaves, taking care that the stems are not higher in temperature than from 65° to 70°. This will encourage the stems to throw out roots; and when these begin to fill your two or three feet border, and you can give thereroots these rich dressings, and manure waterings, you will be enabled to take the state of the roots below your gravel walk very quietly and serenely—in fact, to leave them to themselves.

NAMES OF PLANTS (R. I., Red Hill).—Conifers are awkward plants to recognise from bits of spray, as they vary so very much in their young and old forms. 1. *Cupressus*, certainly, and bears some resemblance to that of *Goreniana*? 2. *Juniperus recurva*. 3. *Juniperus*, and apparently the young form of that of *Chinensis*. (J. Stafford).—1. *Rondeletia odorata*. 2. *Martagon bicolor*. 3. *Cymbidium ensifolium*. All three good stove plants. (I. J. Thomas).—1. *Asplenium trichomanes*. 2. The sterile frond of *Blechnum boreale*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. Sec., J. Butler.

FEBRUARY 23rd and 24th. BOLTON POULTRY, PIGEON, AND CANARY SHOW, Secs., William Chester and Robert Greenhaigh, Bolton. Entries close February 17th,

MAY 25th and 26th. BEVERLEY. Sec., Francis Calvert, Surgeon, &c.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Pitman, Esq.

N.B.—Secretaries will oblige us by sending early copies of their lists.

DISCURSIVE POULTRY PAPERS.

(Continued from page 271.)

"BUT do not your fowls suffer from lack of food in the morning?"

"No."

"And how often do you feed them, as you did just now?"

"Morning and evening."

"Is that all they have?"

"Yes, except a little whole corn, scattered among the grass at mid-day."

"Yet your fowls are in high condition?"

"Like wild Pheasants."

"I know nothing about Pheasants."

"Come and see mine."

Three houses, very small, but lofty, were made against a high wall, which in his old-fashioned place, bounded one side of the lawn and flower garden, in front of the house. These houses were six feet long by three feet deep, made of boards, which were kept well painted. At one end of each house was a door, two feet wide, and perches were arranged inside, so that the birds could roost out of sight. The floor seemed to be nothing but dust. Their runs projected fifteen feet from the wall, and were six feet wide. They were made of wooden frames, over which strong wire netting was stretched. They were seven feet high. As they were kept well painted and clean, the effect of them was pleasing rather than otherwise. In the centre of each, was growing a small dwarf fir tree, and there was unmistakeable evidence round the roots they enjoyed it as a basking place.

When they approached the pens, Mr. Taplin whistled, and clouds of dust at once announced the inmates were on the move. How handsome they looked! Gold and Silver at the two ends, and Chinese in the middle. Nothing could be more beautiful. In faultless feather, their plumage glossy, their eyes bright and prominent. The young lady was delighted; but still one idea was uppermost—where was the food?

"I see a fountain for water," said she; "but where is the vessel for food? I have heard of hoppers for pheasants."

"I disapprove of all," said Mr. Taplin. "You will see how these are fed;" and, calling for some corn, he scattered a handful in each pen among the grass. The birds set about finding the grain immediately. "I must tell you," said he, "these are pets, and, after every meal, I give them odd pieces of bread, or crumbs, that remain."

"This," said the young lady, "is just what I should like;" and she looked at her father. He said something about expense.

"What," said she, "would it cost?"

"The pens cost £13 5s. complete, and the three sets of birds £13. I reared many young formerly, but I prefer now to sell their eggs, which I can do readily, especially the Chinese. I consider, after the first outlay, I have my hobby for nothing."

"But you must," said the young lady, "tell me more about fowls."

"Willingly," said he. "I have shown you mine and my Pheasants; I will teach you how to keep yours in the same condition; and every bird should be equal in feather and health to one that is wild in the woods. I will visit your yard to-morrow; but if you and your father will walk round by a small covert at the back of my house, you shall see how birds feed naturally, and how they should feed when domesticated."

He led them to a hedge, where they could see without being seen. It was a wheat stubble, by a covert side, and, being towards evening, the birds were coming out. One by one they stepped proudly out, and, after casting a look around, they began their evening meal.

"But," said our young friend, "they will find nothing there."

"Yes," said Mr. Taplin, "they will fill their crops. This field was carried the second week in August; it was carefully gleaned afterwards. These birds—and they are tolerably numerous—have fed here ever since; and they will, till it is ploughed. But observe them closely." They wander about, looking keenly in all directions; but they seldom take two steps without picking up something, and are evidently getting all they want. But list! Be very quiet! There is a covey of Partridges, and they are more easily frightened when, at feed, than Pheasants. Look at them. There are fourteen. They are tolerably close together, and their motions are quicker and less dignified than the Pheasants; but they seem sharper at the work, and peck every minute. "There, young lady," said Mr. Taplin, "you have learned your lesson; be sure you profit by it."

"If this is all your game has to eat, I am sure it must be very thin."

"I shall shoot this covert next week, and will send you some Pheasants, that you may try them."

"Oh! I do not mean that," was the answer.

(This would not be a bad peg to hang a flirtation upon, and try our hand at something tender, and so on; but what would THE COTTAGE GARDENER say?)

On the morrow the visit was paid that was to be productive of proper poultry knowledge. The fowls were as dull and listless as ever. The food remained untouched—their combs were getting black, and they had never looked so bad. They had to be driven out of their house. Tiresome, was it not?

Well, when Mr. Taplin came, he asked the young lady to call her fowls together. She did so; but they did not come. A boy was sent into a small shrubbery, and they tottered out. Their feathers were loose; and when the boy ceased to drive, they settled their heads well down, closed their eyes, and apparently went to sleep.

"What is the matter with them?"

"Nothing, that I can see, except over-feeding."

"But they have eaten nothing."

"I dare say not for the last three or four days. Let me see their house."

Now, if there were a place of which this young lady was proud, it was her poultry-house. It was a small red brick building, rather low. It was not ventilated in any way; but, by way of compensation, it had two very smart windows, that would not open. The floor was bricked, and had just been washed down when it was inspected. The perches were as high as they could be. There was a pan of water, a trough of barley, and a plateful of bread and suet chopped up together. The latter had been there some days, and was very musty.

"There, is not that a nice house?"

"Yes, for the gardener's tools, barrow," &c.

"But is it not a nice house for fowls?"

"No."

"What is the matter with it?"

"The flooring is the worst it could have, the perches are too high, and it lacks ventilation."

"Well, I suppose I must pull it down."

"Not so. I dare say I can find a substitute. Let us look round the premises. Here, what is this house?"

"Oh, an old wood-house."

"Well, this will do well."

"I should be ashamed to show it to a friend."

"You need not be. You have what is wanted—a good hard floor of earth; the door is just where it should be. Now see; we will nail two stout pieces of wood along each side of the house, from the door to the end of it. On these, which are but two feet from the ground, the perches will rest. They will then be free from cold or draught. Facing the door, we will put the laying boxes. If you will let me have the carpenter, and a boy for two hours while you are away, I will undertake to have a proper house ready."

"But, see the chinks in the boards over your head; how cold they will make it."

"Not at all; they will supply the necessary ventilation."

In two hours the house was cleaned of rubbish, the floor covered with fresh gravel, and the perches put up. The exterior was not handsome, but no one would wish for a more useful house. Our young friend was delighted, and immediately gave orders that the food should be brought from the other house.

"Not so," said Mr. Taplin; "I am to manage for the present. Catch the fowls, and bring them to me." There was little difficulty in doing that. The first he handled was crop-bound; the other three were nearly as bad.—"Now," said he, "will you promise to adhere to my orders?"

"Yes."

To each fowl he gave a dose of castor oil, and then shut them in the house.—"They are not to be let out to-morrow, till I come."

He was not there till three o'clock in the afternoon. He was met by the young lady.—"Oh! my poor fowls, they will be starved!"

He smiled, and, going to the house, released them. They certainly were livelier, and they looked better.—"Now," he said, "they must have no food to-day, and I will let them out again to-morrow."—He did so at twelve o'clock. Two of them flew out; they had not been guilty of such an act before since they had been there. He gave them as much slaked meal as would make the size of an egg. They ran after it. It was noticed that night they did not go to roost till dark. The next day he let them out at ten, and all flew. He gave them the same quantity of food as before, and they scrambled for it. When he left off feeding, they scattered all over the adjoining meadow.

As they were looking on, the young lady could not help saying,—"They look like Pheasants."

"Yes," said he, "that is what I want to come to."

PRESTON AND NORTH LANCASHIRE POULTRY EXHIBITION.

THIS Exhibition was held on 2nd and 3rd inst. The following Prizes were awarded:—

GAME COCK.—Piece of Plate, G. W. Moss, Liverpool. Second, A. Sutherland, Burnley. Third, R. Leigh, Preston. Fourth, Capt. W. W. Hornby, Knowsley Cottage, Prescot. Very Highly Commended, G. Smith, Birmingham; G. W. Moss. Highly Commended, J. Brindley, Kinbar, near Stourbridge; G. W. Moss; Capt. W. W. Hornby; T. Whittaker, Lancaster; W. Roger, Woodbridge, Suffolk; H. Myers, Padham; S. Matthew, Stowmarket; E. Archer, Malvern; S. Shepley, Chesterfield; J. Dalrymple, London; J. Brown, Preston; R. Swift, Southwell; J. and R. Blackburn, Preston; J. Hindson, Everton, Liverpool. Commended, F. Leedam, Burton on Trent; D. Smith, Yardley; W. Roger; J. U. Walsh, Guiseley; T. Rigby, Southport; J. Bradwell, Southwell; T. T. Parker, Aldington Hall, Chowdley; W. Bentley, Scholes, near Cleckheaton; G. Banks, High Gale, near Kirby, Lonsdale; Bullock and Rapson, Leamington; E. Archer; G. Clegg, Hutton, Preston; J. Dalrymple; T. Shaw, Kirkham; W. H. Dyson, Great Horton, Bradford; A. Sutherland; H. Worrall, Spring Grove, West Derby; J. Anderton, Clifton, near Preston; J. Hindson; W. Dawson, Hopton, Mirfield. (The whole class truly excellent. The Judge expresses his regret that he had only four prizes to award, many others being very highly deserving.)

GAME BANTAM COCK.—Piece of Plate, M. Turner, Preston. Second, G. W. Moss. Third, I. Thornton, Heckmondwike. Very High Commended, M. Turner; T. T. Parker. Highly Commended, W. C. Worrall; R. Leigh; I. Thornton; G. W. Moss. Commended, J. R. Rodbard, Aldwick Court, Wragton; J. T. Johnson, Hull; F. Hardy, Bradford; M. Turner; R. Landless, Marsden; J. Dalrymple. (Generally a capital class. The first prize bird a gem.)

SPANISH COCK.—First, Master M. Rake, Bristol. Second, W. W. Brundrit, Runcorn. Highly Commended, W. Harvey, Sheffield; C. T. Nelson, Birmingham; Mrs. J. C. Hall, Sheffield; J. Martin, Clains.

DORKING COCK.—First, W. Evans, Prescot. Second, J. Robinson, Garstang. Highly Commended, J. Robinson; Hon. W. W. Vernon, Wolseley Hall; R. Chase, Birmingham. Commended, Capt. W. W. Hornby; H. Townshend, Stretton-en-le-Field.

COCHIN-CHINA COCK.—First, W. Coppel, Eccleston. Second, H. Tomlinson, Preston. Highly Commended, R. E. Gibbs, jun., Old Gravel Lane, London; Miss J. J. Beverley, Hutton; R. Chase. Commended, W. Harvey.

BRAHMA COCK.—First, R. Teebay, Preston. Second, G. Botham, Wexham Court. Highly Commended, J. H. Cragie, Chigwell, Essex.

HAMBURGH COCK (Gold or Silver-pencilled).—First, W. C. Worrall, Liverpool. Second, Carter and Gaultier, Poulton-le-Fylde. Highly Commended, W. Banks, Runcorn; C. Hayes, Walkley, near Sheffield; E. Archer; A. Kempson, Charlecombe.

HAMBURGH COCK (Gold or Silver-spangled).—First, Haigh and Hartley, Holmfirth. Second, R. Teebay.

POLAND COCK.—First, Bird and Beldon, Bradford. Second, J. Dixon. Highly Commended, G. C. Adkins, Birmingham. Commended, G. Ray, Minestead, Lyndhurst; G. S. Fox, Wellington, Somerset; W. Harvey.

GAME (Black-breasted and other Reds).—First, W. Dawson, Birmingham. Second, A. Sutherland. Third, H. P. Watson, Preston. Very Highly Commended, G. W. Moss; E. Archer. Highly Commended, G. Smith, Birmingham; G. W. Moss; H. Adams, Beverley; Capt. W. Hornby; R. Swift; J. Hindson. Commended, Carter and Gaultier; J. Smith, Guiseley; D. Parsons, Cuerden, near Preston; W. Blocklebank, Ulverston; A. and J. Hampson, Bolton-le-Moors; W. Ballard, Leamington; T. Robinson, Ulverston; T. Shaw, Kirkham. (The whole class really very good.)

GAME (White and Piles).—First, Haigh and Hartley. Second, A. Sutherland. Third, T. Emett, Preston. Highly Commended, T. Whittaker, Lancaster; S. Matthew; G. Robinson; F. Sabin, Birmingham. Commended, H. Adams; Bird and Beldon. (An average class.)

GAME (Duckwing and other Greys and Blues).—First, J. Brown, Preston. Second, A. Sutherland. Third, H. Worrall. Very Highly Commended, J. Brown. Highly Commended, Capt. Yates, Lancaster; J. Doncaster, Ollerton, Notts; W. Ballard; J. Brown, Preston; A. Sutherland; H. Worrall. Commended, J. Dixon; G. Moss; T. Moss, Poulton-le-Fylde; W. Bentley; J. Pickles, Slaithwaite; S. Matthew. (A capital collection of birds.)

GAME (any other variety).—First, J. Brown. Second, W. Dawson. Third, H. J. Taylor, Wellington, Salop. Very Highly Commended, W. Dawson. Highly Commended, J. Brown; S. T. Smith, Iron Bridge, Salop. Commended, E. Houghton, Lytham; A. and J. Hampson; W. Ballard; Bullock and Rapson, Leamington; H. Parry, Ellesmere Port. (A superior class.)

GAME CHICKENS.—Premium, G. W. Moss. Very Highly Commended, E. Worrall; T. Shaw; R. Leigh; H. Worrall; J. L. Holmes, Broughton, Preston. Highly Commended, G. W. Moss; Capt. W. Hornby; R. Wells, Carlisle; E. Archer; J. Brown; H. Broughton, Harpers, near Burnley; T. Shaw; J. and R. Blackburn. Commended, W. Blocklebank; R. Swift. (A splendid class. The Judge feels sorry that only one prize had to be awarded,—a better assemblage of chickens has never been previously exhibited.)

SPANISH.—First, A. Watkins, Sheffield. Second, J. Carlie, Everton, Liverpool. Third, W. Bailey, Kennington, London. Highly Commended, J. K. Fowler, Aylesbury; Mrs. J. C. Hall. Commended, W. W. Brundrit. (The whole class excellent.)

SPANISH CHICKENS.—Piece of Plate, J. Garlick. Very Highly Commended, Master M. Rake. Highly Commended, W. W. Brundrit. (An unusually good class,—almost every pen being worthy of a prize.)

DORKINGS (Coloured).—First, Capt. W. Hornby. Second, W. Bromley, Birmingham. Third, Hon. W. W. Vernon. Highly Commended, E. Lister, Northwich; J. Robinson. Commended, A. Potts, Chester; H. Smith, Cropwell Butler.

DORKINGS (White).—First and Third, J. Robinson. Second, D. Parsons.

DORKING CHICKENS.—Piece of Plate, Capt. W. Hornby. Highly Commended, J. Robinson; C. H. Wakefield, Malvern Wells; W. Bromley. Commended, A. Potts; D. Parsons.

COCHIN-CHINA (Cinnamon and Buff).—First and Second, H. Tomlinson. Third, J. Cattell, Birmingham. Highly Commended, T. Stretch, Bootle, near Liverpool. Commended, D. S. Moore, Walsall.

COCHIN-CHINA (Brown and Partridge-feathered).—First, J. Cattell. Second, J. Busst, jun., Walsall. Third, C. Felton, Erdington. Highly Commended, Miss V. W. Musgrave, Aughton, near Ormskirk; D. B. Turner, Hull; J. L. Harrison, Dudley; P. Cartwright, Oswestry. (An excellent class.)

COCHIN-CHINA (any other colour).—First, R. Teebay. Second, W. Coppel. Third, C. R. Titterton, Birmingham. Highly Commended, W. Coppel.

COCHIN-CHINA CHICKENS.—Piece of Plate, H. Tomlinson. Highly Commended, Miss V. W. Musgrave; A. F. Watkin.

SWEETSTAKES.—First and Second, T. Stretch. Third, P. Cartwright. Commended, J. L. Harrison; P. Cartwright. (A very excellent class.)

BRAHMA POOTRA (Pencilled).—First, J. H. Cragie. Second, R. Teebay. Third, A. F. Watkin.

BRAHMA POOTRA (Light).—First, T. Billington, Preston. Second and Third, R. Teebay.

HAMBURGH (Golden-pencilled).—First, Messrs. Carter and Gaultier. Second, W. C. Worrall. Third, J. Martin. Highly Commended, J. Martin. Commended, D. Harding, Middlewich; J. Lowe, Whitenowe House, near Birmingham. (A very good class.)

HAMBURGH (Silver-pencilled).—First and Third, E. Archer. Second, T. Keable, Devizes. Highly Commended, J. Dixon; T. Keable. Commended, H. P. Watson.

HAMBURGH (Golden-spangled).—First, S. H. Hyde, Ashton-under-Lyne. Second, W. C. Worrall. Third, C. Felton. Highly Commended, W. Banks; J. Robinson; J. B. Chune, Preston. Commended, J. Andrews, Ashton-under-Lyne.

HAMBURGH (Silver-spangled).—First and Second, R. Teebay. Third, J. Dixon. Highly Commended, J. Dixon. Commended, J. Robinson.

POLAND (Golden).—First and Third, J. Dixon. Second, J. F. Greenall, Grappenhall.

POLAND (Silver).—First and Third, G. C. Adkins. Second, J. F. Greenall. Highly Commended, J. Dixon. Commended, W. Dawson.

POLAND (any other variety).—First and Third, J. Dixon. Second, T. Battye, Holmfirth.

ASY VARIETY.—First, W. Rogers, Woodbridge. Second, W. Dawson. Third, W. D. Henshall, Huddersfield. Highly Commended, C. Balance, Taunton. Commended, J. Scott, Skipton; W. Hill, Nottingham; H. M. Hitchcock, Dunchurch; A. F. Watkin; H. Eastham, Leyland.

BANTAMS (Game).—First, T. H. D. Bayley, Biggleswade. Second, J. Monsey, Norwich. Very Highly Commended, J. E. Maplebeck, Birmingham; J. and R. Blackburn. Highly Commended, J. Brown. Commended, D. Parsons; W. Hornsey, Bawtry; C. Felton; W. C. Worrall.

BANTAMS (Gold-laced).—First, T. H. D. Bayley. Second, H. Worrall. Commended, G. M'Mullin, Preston; Hon. W. W. Vernon.

BANTAMS (Silver-laced).—First, J. Dixon. Second, T. H. D. Bayley. Highly Commended, J. Billyhead, Hyson Green, Nottingham.

BANTAMS (any other variety).—First, J. Cattel. Second, C. Felton. Highly Commended, J. N. Coulthurst, Skipton. Commended, G. Finch, Worcester; H. P. Watson.

DUCKS (Aylesbury).—First, J. K. Fowler. Second, Mrs. M. Seamons, Heartwell, Bucks. Highly Commended, J. K. Bartram, Bath. Commended, E. Lister; W. Maud, Bingley.

DUCKS (Rouen).—First, T. Leigh. Second, R. Chew.

DUCKS (Black).—First, Miss S. Perkins, Sutton Coldfield. Second, G. S. Sainsbury, Devizes. Highly Commended, J. Dixon.

DUCKS (any other variety).—Prize, Hon. W. W. Vernon. Prize, H. N. Pedder, Preston. Highly Commended, J. Dixon.

PIGEONS.

TUMBLERS (Almond).—First and Second, G. Morgan, Manchester. Commended, T. and J. Grimshaw, Pendle Forest; E. A. Lingard, King's Norton; H. N. Pedder.

TUMBLERS (any other variety).—First, G. W. Hartley, Kendall. Second, J. M. Eaton, Islington, London. Highly Commended, F. C. Esquillent, Oxford Street, London. Commended, G. C. Adkins; Master M. Rake; E. A. Lingard.

CARRIERS.—Piee of Plate, C. G. Hill. Second, P. Eden, Salford. Commended, G. Morgan. (An extraordinary good class.)

POUTERS.—First, G. C. Adkins. Second, P. Eden. Commended, G. Ure, Dundee; G. C. Adkins; W. Dawson.

RUNTS.—First, Master M. Rake. Second, T. Eastwood, Preston.

JACOBINS.—First, W. Cross, Battersea, London. Second, J. T. Lawrence, Walton Brock, Liverpool. Commended, Master M. Rake.

FANTAILS.—First, F. C. Esquillent. Second, H. N. Pedder.

OWLS.—First, G. Morgan. Second, G. C. Adkins. Highly Commended, E. Worrall; G. C. Adkins. Commended, Master M. Rake. (An extraordinary good class.)

TRUMPETERS.—First, F. J. Newburn, junior, Darlington. Second, G. C. Adkins.

BARBES.—First, J. T. Lawrence. Second, J. H. Cragie. Commended, J. H. Cragie; Master M. Rake.

TURBITS.—First and Second, G. C. Adkins. Commended, J. T. Lawrence; E. A. Lingard; G. Goore, Aigburth, near Liverpool.

NUNS.—First, G. C. Adkins. Second, Master M. Rake.

DRAGOONS.—First, G. C. Adkins. Second, W. Dawson.

ANY OTHER NEW OR DISTINCT VARIETY.—First and Second, G. Goore. Highly Commended, H. N. Pedder. Commended, G. Ure; G. C. Adkins; R. W. Fryer, Hereford; H. N. Pedder; F. and J. Grimshaw.

JUDGES.—*Pigeons*, Mr. Tegetmeier, of London; *Game Fowl*, Mr. Foulds, of Chowbent; *all other Classes*, Mr. Tegetmeier, of London, and Mr. Higson, of Preston.

THE BRAHMA CONTROVERSY.

SOME writers in THE COTTAGE GARDENER touch again on the long-disputed point, as to whether these birds be a distinct variety, or the result of a cross.

Your correspondent "ALPHA" is a fair and reasonable disputant, and I willingly admit that his remark,—"That if they had been a distinct breed their admirers would certainly have received ere this some importations from the Brahma Poatra River,"—is very much to the purpose, and extremely difficult to answer. But it is not my intention to agree with, or to attempt to confute, any one. I write this to be enlightened on one particular point, by some one or other of your able and intelligent contributors.

Is it not a fact, that a distinct and pure breed invariably produces its like? Does not a cross breed as invariably, at some time or other, throw back to the father or mother? Has a cross breed ever been known to strictly preserve its peculiarity as regards form and feather? We know that Dorkings are very uncertain in colour, and constantly throw chickens with four toes, thus showing their Suffolk cross.

I have always understood that these are established principles. Is it so, or not? If I am answered in the affirmative, all the arguments against the distinctness of breed of the Brahmas must

necessarily fall to the ground, although one may not be able strictly to define their origin. Barnum may be as clever as he be impudent, but he cannot create. That is in the power of the Almighty only.

Brahmas produce their like, save only that the plumage of some is a little darker than others. Tell me why it is that the Judges appear to be so much in favour of the darker pencillings. I agree with "ALPHA," that the whiter variety are infinitely more beautiful. Yet I have never known them take a prize here, although I have been very often satisfied in my own mind, that they have been the better birds—nay, in the very last exhibition at the Crystal Palace, I should say that pen 442 were preferable birds—although only "Highly Commended"—to pen 443, which obtained the first prize.

Speaking of this Show reminds me of a case which may prove that colour can be preserved without a distinct breed. There were three pens of what were called in the catalogue "Cuckoo Cochin China"—pens 917, 919. The hens and cocks were speckled all over like Dorkings. They were certainly a most beautiful variety of fowl, and so the exhibitor (Mrs. F. Walker, of Highgate) appears to think, as she forbids any question about purchase, by putting them down at 1,000 guineas each pen.

Now, what are these birds? One would say, a distinct variety; for who ever saw a speckled cock, of any variety—nay, who ever saw before a cock marked precisely as the hens? In my opinion, Mrs. Walker has the handsomest fowls in England.—H. S. WATSON.

I AM delighted with my ally, "J. K. F." and look for some plain answer to his arguments. Our adversaries have hitherto only said how they can be made; but no one has said he has made them. "ALPHA" refers to the Barnum dodge; but that does not weigh much, as there is no proof it was a dodge; and he who manufactured a mermaid, might, if it would answer his purpose, profess to manufacture Brahmas. If they were made, it would of course be by a cross. In all crosses, it is notorious the produce throws back. If they are made with Malays, Dorkings, or Cochins, has any one ever bred either from them? There were two known strains—Dr. Bennett's and Mr. Burnham's, and these have bred truly. I am at a loss to discover the cause of the animosity that is borne to these beautiful birds; but it is a satisfaction to their admirers, to know that they are being kept wherever a hardier fowl than common is required. The beautiful pens at the Crystal Palace might convince any one that it is a pure breed, as the same type was visible in all. Let the exhibitors speak out. Do they maintain them by constant crosses from any other breed?—SALOP.

OUR LETTER BOX.

LIVERPOOL POULTRY SHOW.—In the report of the Liverpool Show, you have left me entirely out. I therefore send a correct list of Dorking prizes:

DORKINGS (Coloured).—Cup, Capt. W. W. Hornby, R.N. Second, Mr. C. H. Wakefield. Third, Hon. W. W. Vernon. Highly Commended, Lord Sefton; Lieut.-Col. T. Clowes.

DORKINGS (Silver Grey).—Cup, Rev. J. Hill. Second, Mr. W. W. Rutledge. Third, Hon. W. W. Vernon. Commended, Mr. G. W. Moss. C. H. WAKEFIELD.

STALE (*A Constant Reader*).—By the word "stale," we presume that our correspondent "H. C.," at page 272, intends "old vapid boer." If we are wrong in this interpretation, he will oblige by correcting us.

CANARIES.—W. Young wishes for a remedy for asthma in these birds. Also, for a correct drawing of what a Belgian Canary ought to be in form.

CANARIES.—In the advertisement last week of Mr. Nicholson's Canaries, it should have been, "the Prize Bird at the late Crystal Palace Exhibition." The bird took the second prize. The mistake was ours.

LONDON MARKETS.—FEBRUARY 7.

POULTRY.

The most important feature in the market, is the supply of Pheasants, which remain a drug, almost unsaleable at any price. This is our last quotation for this season, and we have to record it has been unexampled in the quantity of game it has produced for sale.

	Each.		Each.		
Large Fowls	4s. 6d. ,,	5s. 0d.	Hares	2s. 6d. to 3s. 0d.	
Small ditto.....	3 0	" 4 0	Pigeons	0 9	0 10
Chickens.....	1 9	" 2 9	Teal.....	1 3	1 9
Geese	7 0	" 7 6	Snipes	1 3	1 6
Ducklings	3 6	" 4 3	Rabbits	1 4	1 5
Wild Ducks	3 0	" 3 6	Wild ditto	0 9	0 10
Pheasants	1 9	" 2 3	Weedcocks	3 6	4 0
Partridges	1 0	" 1 6	Larks	1 3	1 6

WEEKLY CALENDAR.

Day of M'nth Week.	Day of Week.	FEBRUARY 15-21, 1859.	WEATHER NEAR LONDON IN 1858.					Sun Rises.	Sun Sets.	Moon R.&S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.							
15	TU	Erica rubra calyx.	29.922-29.874	40-30	N.E.	—	17 af 7	12 af 5	25 m 6	12	14 25	46	
16	W	Erica vernalis.	30.005-29.936	46-24	N.	—	15 7	14 5	53 6	13	14 22	47	
17	TH	Gnidia imberbis.	30.129-30.096	45-24	N.E.	—	13 7	15 5	rises.	⊕	14 18	48	
18	F	Hovea purpurea.	30.103-30.080	36-22	N.E.	—	11 7	17 5	7 a 7	15	14 13	49	
19	S	Pimelia decussata.	30.020-29.934	38-21	E.	—	9 7	19 5	33 8	16	14 7	50	
20	SUN	SEPTAGESIMA SUNDAY.	30.936-29.820	40-25	S.E.	—	7 7	21 5	57 9	17	14 1	51	
21	M	Sun's declin. 10° 38' S.	29.887-29.883	42-25	E.	—	5 7	23 5	20 11	18	13 54	52	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-two years, the average highest and lowest temperatures of these days are 45.8° and 31.1°, respectively. The greatest heat, 57°, occurred on the 17th, in 1847; and the lowest cold, 2°, on the 17th, in 1855. During the period 141 days were fine, and on 83 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

ADVANTAGE should be taken of frosty mornings for forked over all ridged and trenched ground and compost heaps, both to ameliorate the soil and to destroy grubs, and other such vermin.

ARTICHOKE.—If the weather continue mild, give them their spring dressing.

BASIL and MARJORAM.—Sow in pans, or pots, in heat.

BEANS, BROAD.—Draw earth to the early-sown crops; and, if any were sown in pots, or boxes, place them where they can have an abundance of air night and day, to harden them off for planting out in the open ground.

CABBAGE.—Sow Shilling's *British Queen* and a pinch of *Red Dutch*, on a warm border.

CAULIFLOWERS.—Sprinkle a little dry wood ashes, or dry sand, amongst them, to absorb moisture; and thin out where too thick, as they are very liable to damp off at this season.

CUCUMBERS.—The present mild weather will permit the admission of fresh air daily, which will assist most materially to increase the strength of the plants. Close the frames early in the afternoon, and let them remain shut down until the evening, when a little air may be given during the night, with the end of a mat lapped over the opening, to allow the air to percolate through it.

LETTUCE.—Treat as advised for Cauliflowers.

ONIONS.—Plant out the autumn-sown in a favourable situation.

PARSNIPS.—Sow the *Hollow Crown*, in shallow drills fifteen inches apart, row from row. They succeed best in a deep, rich, and rather strong soil. Manure, if any be given, to be applied at the bottom. If time and other circumstances permit, we would advise, if the ground have been trenched, or deeply dug, to mark out the rows fifteen inches apart, and then to make holes with a thick iron bar, about fifteen or eighteen inches deep and about nine inches apart in the row; the holes to be filled up with fine, light soil, and a small pinch of seed sown on the top of each hole, and then covered. To be ultimately thinned to one plant in each hole, which generally becomes a fine, straight, bulky root.

PEAS.—Sow Woodford's *Green Marrow*, Flack's *Victory*, or Bedman's *Blue Imperial*, for a succession-crop. Harden off those sown in pots, or boxes, as advised for Broad Beans.

FRUIT GARDEN.

FIG TREES.—Prune and train those that require it, tying or bending down the strong shoots, to induce them to produce a number of short-jointed, bearing shoots.

FRUIT TREES.—The pruning, tying, and training of espaliers, and all other fruit trees, should be brought to a conclusion. As the buds are now getting in a forward state, and, therefore, more liable to injury from frost, it is advisable to afford protection to early-blooming and trained fruit trees. The method most commonly adopted is that of tacking fir boughs over the blossom.

GRAFTING.—Where there are inferior sorts of Apples and Pears, or too many of one sort, procure scions of

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superior varieties, and keep them with their cut ends in damp soil, in a cool situation, until wanted for use in a week or two.

STRAWBERRIES.—Clear away dead leaves from the plants, and all superfluous runners.

FLOWER GARDEN.

ANNUALS, HARDY.—Sow in circles, where the plants are intended to flower. They should be covered lightly, and thinned out in time.

AUBICULAS.—Remove dead and decaying leaves, and give them a top-dressing of fresh compost. As they are now getting into more active growth, a gradual increase of water may be given.

BEDDING-OUT PLANTS.—Make a gentle hotbed, to receive fresh-potted plants, and to forward such as are required to be excited for taking cuttings from. Give air, water, &c., and repot all plants that require it. Propagate by cuttings *Ageratum*, *Anagallis*, *Geraniums*, *Lobelias*, *Nierembergias*, *Petunias*, *Salvias*, and *Verbenas*.

CALCEOLARIAS.—Pot off all well-rooted cuttings, that were put in during the autumn.

CARNATIONS and PICOTEES.—The plants in pots to be kept clean and rather dry, and the surface of the soil to be lightly stirred up.

CLIMBERS.—Sow seed in heat, or propagate by cuttings, *Calampelis*, *Cobæas*, *Loasas*, *Lophospermums*, *Maurandyas*, *Rhodochiton*, *Tropæolum Lobbiæ*, or *T. Caroline*.

DAHLIAS.—Continue to strike cuttings in moist heat.

GRAVEL WALKS.—Weed, sweep, and roll, in dry, open weather.

HEDGES, where wanted, may now be planted, while the weather continues favourable, of any sorts required for fences, shade, or shelter, of deciduous and evergreen kinds.

LAWNS OR GRASS EDGINGS.—Any irregularities of the surface may now be corrected; beating it well down with a heavy wooden beater, closely and evenly, and then rolled.

RANUNCULUSES.—Plant, if not already done, as directed last week, whenever the soil is sufficiently dry.

WILLIAM KEANE.

CYCLAMEN—DODECATHEON—AND ERITHRONIUM.

THE earliest and the gayest spring flowers were the Cyclamens; and the natural looks of them, and of the Dog's-tooth Violet (*Erithronium Dens-canis*), and of the American Cowslip (*Dodecatheon*), came so near one another, that the three kinds might be put upon the same footing to advantage for three distinct reasons.

The first reason is, that some people hardly know yet what a Cyclamen is, or is like; others know less of the Dog's-tooth Violet; and some, who know them both, but do not mind about the American Cowslip—or, if they do, they can only wonder how the American flower can be so different from the English flower of the same name.

The second reason is this—if you count so many heads in the parish, who read *THE COTTAGE GARDENER*, and who are fond of spring flowers, you will find that most of them, if not all, do know some one of the three *naturals*, or the three kinds of plants, which look as if they were but one kind; and, from knowing one of them, it will not be difficult for them to understand how like the other two are to it, and to one another. There is no way so easy for learning a new plant, or an old one either, as to compare it, in one's mind, with any well-known plant which is like it.

The third reason is, that the three kinds make three “courses,” or successions of the same kind of bloom in each spring, from the middle of February to the middle or end of May, without the loss of a single day. But what is the best way for managing the three kinds on the natural-order system, if you understand that, in exception to a natural order of plants,—a system of management, or cultivation, being quite a different thing from a system of placing plants according to their relationship to one another? Two of our sorts, the Cyclamen and the American Cowslip, are indeed very closely related; but the Dog's-tooth Violet is of a widely different nature, although the flowers look much the same with the others.

The best way of arranging them, like the best way of all other things, depends on taste, for which there is no rule; so no one can break a rule by saying his own way is best in anything. But no man knows yet the best way of growing these three kinds of spring flowers, so as to make the best of them, for giving the best effect with the least trouble.

Last spring, I saw a boxful of the *Dodecatheon*, or American Cowslip, growing here in Surbiton, for the first time in my experience. The plants, or the “roots,” came from Edinburgh a few months before I saw them: and they were just beginning to open the flowers when I saw them first; and that was in a basket with a man who was then on his way to plant them, at a house near the bottom of the Crescent; the whole proceeding, from first to last, being under the guidance of a lady. The man's name is Ross. Mr. Ross is a well-known gardener in Surbiton. I watched the progress of the plants in that box with very great interest. Nothing could have done better: but whether Mr. Ross or the lady attended to them I cannot say; for the one I seldom see, and the other I do not know.

The practice at the Experimental of not planting the spring flowers and bulbs late in the autumn was not then published; and the plan of planting out many spring flowers, just as they are coming into bloom, is not much known—or, at least, it has not been much written about; so that this lady's plan was not a leaf out of our book, nor yet following the herd, as the saying is. It was a distinct practice, which answered remarkably well. I intended, at the time, this box should have been talked about. Since then, however, I have seen reasons and conclusions—no matter where—that a boxing system might be established all over the country; and that the boxes would, or might, some day or other, become as celebrated as Harry Moore's boxes, in which he grew the *Tom Thumbs* seven years running, without a change of soil or plant.

Yet, Harry Moore's *system* must not be the rule with boxing spring flowers. The moment they are over, the boxes must be got clear of them, to take in the summer crop. When Mr. Atkins brought up his most lovely *Cyclamen Atkinsii* (thanks to “M.” for the proper spelling), he had two large masses of them in shallow pans—kind of pots; and shallow boxes would have been just the thing for them.

There are two out of my three natural looks of a plant, disposed of to the best satisfaction. They have been proved, in other hands, to do exceedingly well on the boxing system; and all that I propose is, to make use of the third, with the two in one box, or each of them in

two separate boxes. A box that would fit a window sill, outside, could be had brilliantly, and very sweetly furnished, and in bloom, from this time to the time of planting out, by filling down the centre with four or five kinds of the *Dodecatheon*, being all variations from one common kind; but the two kinds called *elegans* and *gigantea*, are the more general favourites: but, say the favourite kind, or all the kinds in one box, planted rather closely in one or two rows in the centre. Then another row, on each side, of spring *Cyclamens*; and, round the edges, a thick row of the Dog's-tooth Violet, the roots to be put in closely by the side of the box; and they might remain there all the summer, as they are not easy to move while growing, being close to the sides. The roots, or tubers, would not be in the way of the next crop, and in the autumn they would turn out easily enough. They could be lifted out of the borders now, for box planting, and they can be removed, with perfect safety, till they are in full bloom,—all Crocuses the same. February is the best time in all the year to transplant every one of the spring Crocuses: and when there is a doubt about the colour, or a desire to arrange the colours, I would never think of stirring the old roots, till I saw the first bloom, to make sure of a hit.

The reason that Crocuses force best when they are taken up just as the points are showing through the ground, is this—by that time the flower-bud is ripe enough “to blow;” but the cold keeps it down yet awhile after all is right; but take up the roots, give them any degree of heat at your command, and the degree will determine the time to get open the bloom. Now, if we begin with Crocuses, and Dog's-tooth Violets, to lift them in February, for pots or boxes; and, on the other hand, if we need not plant out a single Dutch bulb, or root, or tuber, from the reserve-ground,—where they were put in last September and October, till the self-same time in February, which is the practice at the Experimental,—see what an advantage it is over the hurry and scurry of planting for spring use late in the autumn.

But, without having such fancies as boxing flowers, and coaxing gardeners to try all manner of boxing, we should never have found out one half of the moves and secrets of gardening in any other way, that I can think of. But the *Cyclamens* we cannot deal with that way; we cannot lift them, or divide them successfully, or propagate them profitably, but by raising them from seeds; nor will they seed always, and under all circumstances; but most of them—the spring ones more particularly—can be made to seed, if the plants are in good health, by attending to the flowers, when they are in their prime, and by dusting them with their own pollen. Tickle the anthers with a pin, and the dust, or pollen, will fly about, and some of it will reach the stigma, or female part. There is only one stigma to each flower; and, like the *Polyanthuses*, with or without the “pin-eye,” they are easily crossed or impregnated, when the stigma of a *Cyclamen* is exerted, or comes out beyond the anthers, which corresponds with the “pin-eye” of the *Polyanthus*. That flower is dusted more easily by keeping the flower in its natural position, but when the stigma is shorter than the stamens, the flower must be turned upside down, while the anthers are made to give off the pollen, else the chance of touching the stigma may be lost.

Spring *Cyclamens* are yet not so common as to be grown out of pots; but thousands of them are now on sale in the nurseries, and they may be had in collections of many colours, from pure white to the deepest crimson; and as they must be increased by seeds only, and have sported, we shall soon have the kinds as numerous as any of the florists' flowers.

Some one broke the rule of writing to one of the writers, instead of to the Editors, and says that *Cyclamen repandum*, and *C. litorale*, are two genuine species. Well, what if they are, they are not better or worse for

that. Nature made no difference, that I know of, between species and varieties of Cyclamens. When any one of them comes to be long under cultivation, the seedlings from it vary in the leaves, and sometimes in the shade of colour, both of the leaf and flower. But the common Oak and Scotch Fir do the same in their way. However, the charge was made against what I said, lately, about the right names of Cyclamens. That story has brought up one *Cyclamen vernum*, as I believe, without seeing it; and that letter put me on my metal, to see who was right. I spent hours in the library of the Horticultural Society, tracing out the names and the figures of all the race of Cyclamens. *C. litorale* seems, indeed, a wild species, belonging to the same section as *Coum* and *vernum*, and a larger flower than either of them, which is a pale red; but it may be a seedling from *Coum*, or *Coum* from it. No one now can possibly decide that point; and *Coum carneum*, which is now in bloom before me, is as like *litorale* as any two plants can be in looks, where these two plants grow wild. They have been favourites, in cultivation, for more than two hundred years, and could only be had from seeds; so that I can see no possibility, or any use at all, for making out what is called a true species of more than one of them.

But *vernum* must be a distinct species from the rest. Sweet had it in cultivation at Colvill's Nursery, and figured it among the first plants in his "British Flower Garden." He says the plant is stronger than *Coum*; "and the leaves and flowers are produced on a kind of short, flat stem, that branches from the tuber, not directly from the crown of the tuber, as in *Persicum* and *Coum*." No other Cyclamen makes these "short flat stems," from which leaves and flowers issue.

About that time (1825), the practice at Colvill's Nursery, and other places, was to put up bulbs and tubers, and the gouty-stemmed Geraniums, on dry shelves to rest; and to repot them when they showed a disposition to grow. Plant-houses were then kept much drier than they are now; and under those circumstances, this *Cyclamen vernum* did not bloom till the beginning of March: but that circumstance, or the "short, flat stems," has not been mentioned by any subsequent writer. Sweet also says the style of *vernum* is exerted, and that the plant seeds freely if it is dusted with its own pollen. Then it follows that it may be retarded to meet, for crossing, the spring Cyclamens, or be pushed on to bloom at the end of the autumn, to cross with late specimens of *Neapolitanum*, the latest in the autumn. *Repandum* has no vestige of a title to be called a species. Sweet gives a figure of it from a cultivated plant; but long before him a better and more true representation of it, was given by Sibthorp, in his "Flora Græca," where the name is first given to a weak plant of the now *hederifolium*. Lindley's *Cyclamen Clusii*, is just the same as *C. Europæum*, but not the then-supposed *Europæum*; for Sweet figures the true *Europæum*, and remarks on it, that "the plant sold in British nurseries is nothing else than the British *hederifolium*." Also, that "the *fragrans* exceeds almost that of every other plant with which he was acquainted." Dr. Lindley makes the same remark on the same plant,—his *Clusii*. It "emits so delicious an odour, that no plant can be better calculated for ornamenting a lady's boudoir."

With the single exception of *litorale*, about which no one can ever be quite certain, I see no reason to alter a single syllable of what I formerly said about species and false names among Cyclamens.

In conclusion, allow me to register my vote in favour of keeping the most valuable library of the Horticultural Society, at whatever sacrifice. I know of only one other copy than that which is there of the "Flora Græca,"—the most expensive of all the books in any of our own public institutions,—the Botanic Garden at Oxford, where I first consulted it with Mr. Baxter, the curator.

D. BEATON.

PEAS: THEIR CULTURE AND THEIR MILDEW.

PERHAPS there is no other vegetable in such general esteem as the Pea; none, I think, that most persons can partake of so frequently during the season without satiety, unless it be the Potato. The latter is a sort of second bread, scarcely to be termed a dainty; but the Pea is rather a luxury; and I have known persons, particularly fond of them, eat them at breakfast, dinner, and supper, for a week or two continuously. No wonder that such encouragement is given to the raising of new kinds. In the descriptions given of the latter, much is claimed on account of their fine flavour; but, I would here ask, has any advance been made in the flavour of Peas since the introduction of *Knight's Wrinkled Marrow*—the original, I mean, which first appeared nearly fifty years since? I well remember first tasting them, boiled together with bacon, about that period, and have never tasted richer Peas since. No: the real progress has consisted in producing a dwarfer class of the *Marrowfat* section; and this is no small boon to the gardening world. A plaguing question with most gardeners, even in places of consideration, has been the peastick affair, for if they can be readily obtained, the time of dressing them is very considerable, or appears so, where there is deficiency of labour. It is somewhat remarkable at first thought, to consider the fact, that almost any decent soil that will produce a good Cabbage, will also give pretty good crops of Peas of the earlier sections; yet, that many of these soils will not produce good late crops of the same or any other kinds. I have heard very sapient persons argue in high sounding words, about the cause of mildew; one insisting it is in the soil itself; another, that the atmosphere had to answer for it. It must be solely one or the other, or neither disputant would be triumphant. But, surely in considering about mildew, we may take both into consideration; and whilst admitting that heat, and, more especially, aridity in the atmosphere, are peculiarly favourable to the spread of mildew, inquire also whether there are not conditions of soil favourable to this pest, whilst others are averse to it. My notion of this mildew, the *Erysiphe communis*, is, that an over-high elaboration of juices, through heat, much solar light, and, consequently, aridity of atmosphere, changes the character of the sap; and that certain exudations produce a character of epidermis, just suitable to the mildew. Now, I hold also, that admitting such to be the case, the only means at command are to promote a much greater degree of absorption by the roots, and increased activity. In addition, if the soil in the vicinity of the Peas could be damped over by an engine, or otherwise, every morning early, it would, doubtless, be a benefit. As to root-watering, for my part I am somewhat jealous of it, and think it best so to prepare the soil as scarcely to need it. Those who sow in weak and hot soils, will, of course, be driven to watering: but it should be weak liquid manure, and of the temperature of 80°.

Our readers in the main, are, perhaps, aware that the Pea is liable to what is called shanking; and that the stem, at the very surface of the ground, is tender. Every means, therefore, should be taken not to injure this part; and I think it not unlikely, that water applied in hot afternoons in summer, when the soil and all around it breathe a temperature of some 80°, perhaps, and the water only 50° to 60°, is productive of some injury at the tender part alluded to.

It becomes me now to talk about the proper preparation of the soil so as to avoid mildew, if possible. In the first place, I am all for deep digging, or trenching, in kitchen gardens. Few gardens get more of this than ours; few produce a greater abundance of superior vegetables—Carrots alone excepted. Give me a deep root, with a nourishing and moist medium below, and I give

my waterpots, what some noted waterers would call a sort of holiday. I prefer the spade to the waterpot. The practice I recommend for late crops of Peas to withstand mildew, stands thus:—The line being stretched where the row is to come, throw out a trench one foot in depth, a spade's width on each side of the line. Now flood the bottom with water, if not too retentive, making it thoroughly moist. Next, think of manure, some which will hold moisture a long time. For this purpose it should not be highly decomposed, but what is called half-rotten, and some that feels sticky, not crumbling stuff like leaf soil. I spread six inches over the excavation, and dig it in boldly a spade's depth, endeavouring to mix it with the soil beneath. We have now a hollow of six inches; and to this apply a second dressing of older compost, adding also plenty of charred rubbish to it, to the depth of three inches more, and on this spread three inches of the excavated soil, and then well mix the two together; but do not bring up the bottom layer.

All will now be level again; and the next thing is to draw the Pea-drill at once, five inches deep, and then to soak it with water, without puddling it. The drill should now remain for a day, to settle fairly, and then the Peas may be sown. In the next place, I advise caution in the use of pea-sticks. We are all compelled occasionally to use old sticks; but let me advise as strongly as I can, using them for the earlier Peas. Old sticks are noted for this obscure and insidious order of vegetation; and who can doubt, that the spores, or mycelium, of this mildew, finds a winter residence in these same old sticks?

Again, alluding to the tenderness of the lower portion of the stems of Peas. I well remember that when first I launched fairly into the world of gardening, "armed at all points," as my youthful enthusiasm fancied, that I had no patience when my earliest Peas came forth in January, until the rake was passed over them. To loosen the soil was the plea; but in truth, I think, in order to make the crop look more forward than it really was. Now, that sprouting Peas like the soil moved a little, is true; but an iron rake passed over their tender heads they abhor. Moreover, by this process, they are in danger of having a portion of their blanched stems too suddenly exposed to light, and the vicissitudes of the atmosphere; and this is exceedingly injurious. Young gardeners should bear this matter well in mind, for it is not only Peas, but most other things: no blanched stem will bear sudden exposure. Thus it is a general rule with plants which, on removal, show blanching in the lower portions of the stems, to plant them so that such blanched portions are below the ground level.

R. EBRINGTON.

COVERING VINE BORDERS.

I INTENDED saying a few words on this subject some weeks ago; but even now it is not too late for most of our readers. I do not think I can add anything, except in the way of illustration, to what was advanced some time ago, tending to show that the benefit of protecting depended greatly on the depth of the roots; the condition of the soil as to drainage and comfortable dryness; and the time as to earliness or lateness when the Vine was forced. At present, the matter most in debate is not so much protecting the borders of forced Vines, as whether that should be done by loose litter or by fermenting material; in connection with the question, whether it is possible to transmit heat downwards by such a process, and yet not harm the roots of the Vines. To this, also, we will make an incidental allusion; leaving to our good friends the equal right to form and express their opinions.

There can be no question that in very early forcing many failures took place from a total disregard to stimulating into activity the roots as well as the branches. A branch from a Peach tree, or a Vine, growing against an open wall, is taken into a late house, and ripens its fruit

a fortnight or three weeks earlier than the exposed tree; and the conclusion is jumped to, that, provided the branches are forced, it matters but little what may be the temperature at the roots. The scheme is tried in January or February in the case of a plant, the bulk of whose roots is only from six to nine inches below the surface. A sharp frost ensues, penetrating to as much as that depth; and inquiries are sent to all the gardening periodicals as to what can be the reason that the young Peaches drop, and the leaves flag, and the Vines flag, and the bunches say "good-bye" in fine, sunny, frosty weather. There was, and could be, no reciprocal action between the roots and branches. If the roots had been a foot deeper—or if from six to twelve inches of litter had been thrown over the surface—the frost would not have penetrated, and a languid circulation might have been obtained, and the mischief averted.

Take an opposite case. Here is a viney, the forcing of which commenced in December: the border is deep, and waterlogged from want of drainage; the bulk of the roots is from eighteen to thirty inches below the surface, and long, bare, and lanky they are. The Vine produced last season parasol foliage, luxuriant wood, and large bunches, but bad-coloured and shankled. The gardener has been advised, not only that the roots are too deep, but too cold. He resolves that they shall have heat this season; and forthwith claps on the border a depth of eighteen inches to twenty-four inches of fermenting matter, as if he intended his border for the base of his Cucumber and Melon ground. He knows the border was wet before covering; and that the water, from the impossibility of getting out or away, hangs in it like a sponge during the winter and spring. If, in such circumstances, the heat could get down, he never stops to inquire what might be the result of placing the roots in a warm bath. What troubles him is, that he cannot get the heat down. He can make the surface hot enough; but whether he feels his trial-sticks, or pulls up his sunk thermometers, all tell him the same tale—that beyond a few inches in depth, it beats him to get a temperature above 46° or 48°, and that is but a meagre return for all his trouble. If he is anxious to know the cause, let him have a gossip with the seaman, who, when becalmed in the tropics, could plunge his bucket to a considerable depth, and thence bring up water bracing cold in comparison of the hot fluid seething at the surface. Or, let him take a walk with that intelligent young farmer-neighbour of his, and note between this and April the very different appearance of the Wheat plant in the same field—in one place green, flourishing, and tillering beautifully; in another, at no great distance, yellow, and starved-like in appearance. Why? Because one part was drained, and no cold water waterlogged the roots in winter: and because the other was undrained, and was not only sodden and ice-chilled in winter, but the very sun in spring, that heated the drained land, tended at first to cool the undrained land before the moisture could be dispersed by surface-evaporation. Heat, either from the sun or otherwise, has little power to diffuse itself through a liquid downwards, or through any body saturated with a liquid.

Although these matters are well known to the experienced, I would gladly refer for elucidation and confirmation to pp. 97 and 98 of the "Gardener's Assistant," by Mr. Thompson; a work that, judging from what has already appeared, ought to be a favourite with most gardening readers, and especially with amateurs and young gardeners. I may just here note in passing, that I know little of the peculiar secrets of authorcraft and publishing; and therefore nothing at all of the reasons why Mr. Thompson should be made known to us as the member of several foreign societies, and not a word said of his long and honourable connection with the Horticultural Society of London; though in that capacity no man could be more generally respected, alike for great

talents, and, combined as these were, with perhaps too much of an unobtrusive retiring modesty. I know of a dozen subscribers at least who would not have been likely to take the work, had they not been informed that this member of foreign horticultural and pomological societies was, after all, our own Turnham Green Thompson. Let the publishers look to it.

Well, pardoning this digression, you will there find what I referred to the other week—that the Red Moss at Bolton-le-Moors, at seven inches below the surface, could neither be heated by the warmth of summer, nor cooled by the frosts of winter, beyond or below 47°, and that it retained that temperature to at least the depth of thirty feet. When drained, the temperature in June at seven inches below the surface rose to 66°. The regular temperature of the undrained part approached the medium atmospheric temperature of the place, though the extremes between the hottest and the coldest ranged from 24° to 25°. To show still more conclusively how little heating power can be transmitted downwards from the surface of a liquid—or even through a solid, such as earths saturated or covered with liquid—an experiment was made which our young friends may repeat for themselves. A square box was formed, eighteen inches deep, eleven inches wide at top, and six at bottom, furnished with a tap at bottom. This box was filled, to the depth of twelve inches and a half, with earth saturated with water, and covered with the same. A thermometer was secured in the centre of the mass, the bulb being within one inch and a half of the bottom of the box. The heat indicated was 39½°. A gallon of boiling water was poured on the top, and in five minutes the thermometer rose to 44°. This rise was owing, however, not to the conduction or absorption of heat by the water-covered and saturated soil; but to the heat getting down by means of the tube and the case of the thermometer. To prove this, another thermometer was let in at the same level through an opening in the side of the box, and therefore having no direct communication with the hot water at the surface; and thus placed, no variation took place in the height of the thermometer, even after one gallon of boiling water had cooled, and another, and another in succession had been poured on the surface. Of course, when all the liquid was allowed to drain through the tap-hole at the bottom, and the tap again replaced, and hot water poured over the unsaturated soil, the temperature of the whole was quickly raised, so as to secure something like an equilibrium from top to bottom. Such a simple experiment will show the impossibility of heating wet lands, until the redundant moisture is dispelled; the inability of warm rains getting an entrance into a soil already saturated with cold water; and the consequent futility of trying to heat a border to any depth, by any amount of fermenting matter, if that border is saturated with water.

As to the transmitting of heat downwards by fermenting material or otherwise, denied to be possible by some, because heated air, vapour, &c., naturally ascend—they leave out of view the constant tendency to an equilibrium of temperature in bodies, going on constantly, however slowly. Thus, it is no uncommon thing to find in severe weather, even in our climate, frost penetrating downwards to the depth of four or six inches; but beyond that, if the ground is only moderately dry, and so long as the frost continues, the earth next the frozen part will decrease in temperature, and that decrease will go downwards gradually to a number of feet; though, the lower we go, we shall generally, in such circumstances, find the temperature the highest. For instance: if, at a foot below the surface, we found the temperature at 34°, at two feet we should find it about 36°; at three feet about 39°; and so on, higher as we got deeper: and the greater the heat retained in the soil before the frost came, the more would that heat tend to modify its intensity, and the depth to which, in straight lines, it could reach.

There is no want of evidence that cold gets downward

easily enough, merely from the loss of heat upwards by radiation; and in the summer months there is just as much proof that heat gets down slightly by radiation, and chiefly by absorption and conduction. Here, however, we find the position of the temperature of the earth reversed to what it is in winter; for the surface, or near the surface, is generally the warmest, and the heat decreases as we descend. Thus: supposing that in July we found the heat two inches below the surface to be 70°, at the depth of a foot we should expect to find it about 67°; at two feet 64°; and so on. As a general rule, from the end of May to the middle of September, the soil near the surface is highest in temperature, and gets lower as we descend. From the middle of September to the middle of May, it will generally be found that the lower we descend the higher we shall find the temperature. For instance: when the surface has been frozen two inches deep in December, a thermometer at a depth of three feet has indicated 45°; when the frost lasted some weeks, though not penetrating much farther, the thermometer, plunged to that depth, gradually fell to 41°. In a similar place, where the border was protected with some six to nine inches of dry litter, the sunk thermometer scarcely varied at three-feet depth from 46° to 48°; showing what even a surface-littering could do to keep heat in. Seakale beds, covered slightly in the autumn, wanted little heat comparatively to start them into growth in the spring. Since seeing and reading of the experiments of Mr. Drummond, at Culross Abbey, with thermometers in soils and borders, I have made many experiments in the same direction, corroborative alike of Mr. Drummond's facts, and of the interesting tables and conclusions as given in p. 267 of the current volume, (No. 539).

Notwithstanding, then, the demonstrated fact, that heat always rises so much more naturally than it can be made to descend—and that earths and soils, even when aired and free from stagnant water, are some of the poorest and slowest of heat conductors—the above observations will sufficiently show that their radiating and conducting powers are sufficient to make them much cooled in winter and much heated in summer; and my limited experience leads me to the conclusion, that any other heating medium would exert a similar, though less natural and less powerful, influence than the sun. By means of the sun's rays striking the surface of the earth in summer, it becomes heated, and that heat is transmitted to a considerable depth in well-drained land—by means of the heated air finding its way into every opening and cranny in well aired soil (for here we should find that the strong natural tendency to equilibrium would conquer the mere laws of gravity as applied to cold and hotter strata of air)—by means of absorbing the rays of heat faster or more slowly as the colour was more dark or light; and then transmitting that heat by conduction, according to its density and solidity. Manage to keep a heated medium close to the surface of the soil; and, notwithstanding the tendency of the heat to rise, it will also raise the temperature of the soil beneath it, decreasing in power just like sun-heat as it descends. I regret I cannot lay my hands upon some experiments that would tend to show this more clearly. The results, however, seemed to indicate that absorption and conduction were the chief means in such circumstances for transmitting heat downwards. I had proved satisfactorily to myself that a thermometer, with its bulb six inches below the surface of a hard gravel-walk, was raised higher and more quickly by sun-heat than a similar thermometer, sunk to a similar depth in a surface-stirred border. The walk, when freely exposed, also parted with its heat the soonest. I have generally found that a border rather close, especially at the surface, was more quickly heated by conduction downwards, than one more open and stirred at the surface. If the frost be excluded by a litter-covering by the middle or end of October, so as to prevent the stored-up heat of summer freely escaping, I have found that from

twelve to fifteen inches of fermenting matter, such as tree leaves, will be sufficient to give a heat on the border in moderate weather of about 70° , three inches below the surface; 68° at the depth of six to eight inches; 66° at the depth of a foot; and about 57° at the depth of two feet—a heat quite as great as the roots would have in general seasons in summer from natural causes; and therefore, when forced, placing the roots as respects heat in something like a natural position. These temperatures will vary according to the weather and the state of the border, especially as respects freedom from stagnant moisture; but they will be found pretty near the mark on an average. The thermometers, if possible, should be placed in open tubes or drains, communicating with the end or front of the border, the end of the drains being shut; and then the thermometers will not be influenced by the fermenting matter placed over the border, farther than that communicates heat downwards.

So much as to littering and placing fermenting material on a border containing the roots for forced Vines. As heat rises most naturally, I would cordially agree in the propriety of a heating medium in a chamber, or other contrivance, below the border—such as hot-water pipes—so that there would be no possibility of the roots coming in direct contact with the heating medium. But even then, for early forcing, there would be a necessity for littering the border, or covering it with glass, or some non-conducting medium as wood, or asphalt shutters; or, in severe weather, there might be a very great difference between the heat at the bottom and the surface of the border. In unison with such border-protection, one of the finest vineries I ever saw, had most of the heating surface in a chamber below the border,—the necessary heat for the atmosphere of the house being admitted by slides. In such a mode of heating, the border should not be too deep, as the heat will attract the roots down. On the other hand, throwing in a little heat from the surface will help to entice the roots upwards. I have not had much experience in heating from below with pipes; but that, little as it is, would make me anxious to introduce it, if possible, into all new vineeries, for early forcing, that might come under my management.

To resume, then, I think we may conclude:—

1st. That in deep, undrained borders, and where the roots are also deep, littering the surface to keep out frost will be useful; but a huge heap of fermenting material on the surface, will be of no avail. Drainage would be the first thing they wanted; and, perhaps, raising the roots the second.

2nd. Where no covering of borders is practised, and there are no means of heating them from below, and yet forcing be commenced in January, or earlier, those Vines will be safest that have the roots from eighteen to thirty inches below the surface, as the average temperature at the greater depth will be much higher than at a shallower one.

3rd. When the bulk of the Vine roots is from nine to twenty-four inches from the surface, not only will a moderate covering of fermenting matter increase the temperature at the roots, but, the greatest heat being at the surface, the roots will be induced to rise.

4th. On the other hand, without such fermenting matter, or covering of any kind, the roots will be tempted to descend in search alike of moisture and increased warmth.

5th. When the roots are from six to eighteen inches from the surface, not only may they easily be excited into growth, but also easily injured by too great an amount, and too much power in the fermenting material. What is a good servant, we may find will prove a bad master. We should not, in such circumstances, like the soil, a few inches below the surface, to be much above 70° .

6th. Finding that in spring, summer, and autumn, when in favourable positions, the Vine buds, grows, and ripens fruit out of doors; that the heat of the soil at the

roots, though more regular, is but little below the average temperature of the atmosphere; and taking natural phenomena for our guide; we would incline, when forcing the Vine out of its natural season, to try and stimulate the roots into action, as well as the buds and branches, by throwing in heat for this purpose from below when we could, and by coverings on the surface when we could not. I would also incline, if possible, to give the starting point, instead of the laggard following after one, to the roots. No one, however, will more carefully ponder and weigh opposite conclusions.

R. FISH.

CALCEOLARIA CULTURE.

OUR Calceolarias have done exceedingly well this year under the following simple treatment:—We strike them in cold frames, and keep them there till spring. About the latter end of April we turn them out of the frames—if the weather is at all favourable—and plant them on a south border six inches between the lines, and four inches from plant to plant. There they remain till the fourth week in May, and become good plants. If there is some leaf mould, or old tan, to the roots, it makes them lift with much better balls.

In the fourth week of May they are taken to the flower-beds, the soil in these being a stiff loam. The plants give no further trouble after planting, beyond merely giving them a little water to settle the soil about the roots. To have better plants and more flowers upon them than we have is needless. The sorts we plant are—*Kayii*, *latifolia*, and *amplexicaulis*.—AN UNDER-GARDENER, Derbyshire.

NEW VINES—TRANSPLANTING OLD VINES.

IT is not uncommon to see notices of seedling Vines, that have either had prizes awarded to them, or been “highly commended” by the Judges of Horticultural Societies, some of which differ but little from the parent stocks, while others are certainly worthy of notice. In general, they are offered to the public, as strong plants, at from ten shillings to a pound each. This may seem high; but those who sell them may have paid a good price for the stock, or kinds, and spent something for advertising; besides, their profit depends much on the sale of the young Vines the first season. However it may be, as regards price there can be no deception; but, of course, he who gives it expects to have a strong plant for his money. Unfortunately, however, in this, as in other matters, expectation is not always realised, and he receives a spindling, delicate plant, requiring another season’s growth before it is worth planting. Hence, not only arises much disappointment, but sometimes the new kind, however good, is rejected, and little thought of afterwards. Perhaps I need hardly observe, that this disappointment often arises from Vine plants being reared from eyes, or buds, of weak shoots, and being hurried on to meet the demand.

These remarks, with some modifications, may be also applied to private parties who canvass subscribers for their new Vines. However, I would rather prefer eyes, or buds, from strong and well-ripened shoots, from which better plants may be raised than those I have named, even supposing them to be two years old. To a novice, such plants, in pretty large pots, may appear more showy; but a practised hand knows that they have nearly finished their season’s growth, especially if the tiny shoots are brown, and have begun to ripen in May; whereas plants raised in spring, from the strong buds I have named, have the whole summer to mature their growth. After this, it would be idle to say which will be the strongest plants the next season.

I wish it to be understood, that these observations do not refer to respectable nurserymen, to whom the public are much indebted for bringing new and rare kinds of fruit into notice, but rather in defence of gardeners whose employers happen to purchase new kinds of Vines, expecting to find them fruitful the second season, and are impatient under the disappointment. This date may appear too long to those who possess strong young Vines, and more so to some that profess to have a crop of Grapes from Vines only one year old—I mean plants that are reared one season and bear a crop the next. I certainly once knew an instance of that myself, but it was under very peculiar circumstances. The Vines were *Black Hamburgs*, raised from spurs

attached to pieces of old wood as thick as a man's wrist, planted inside the house on a border, chiefly of very light soil and decayed leaves. During the season, there was a gentle glow of heat in the border, and the spurs rooted most freely, and sent up vigorous shoots, as thick as a man's thumb. These produced a large crop the next season, but, from mismanagement, the Grapes did not come to proper maturity; in fact, they were, as it too often happens, of a foxy colour; and, by further bad treatment, the Vines thus prematurely raised soon went to decay.

Again, I knew of an instance of Vines bearing a crop of Grapes the first season they were planted. But that was rather an expensive affair, which few can command. The Vines belonged to one of our best Vine-growers, and were pruned on the spurting plan, having stems as thick as a man's wrist. They were taken up under his most watchful eye, with the greater portion of their roots, carefully packed, conveyed upwards of a hundred miles, replanted, and bore a crop the same season. Although the berries were small, still they came to proper maturity, and the succeeding crops were the most splendid I ever saw, at that time or since. I am not aware of any other instance of that great feat of transplanting old Vines being recorded, and, in confirmation of what I have said, I may state that the Vines were planted, some years back, at Hingham Hall, Norfolk, by R. Crawshay, Esq., now of Ottershaw Park, Surrey, perhaps the most successful cultivator of the Vine in the United Kingdom. I may note, that I was rather a young gardener when I first observed his plants with Vines, and perhaps had as much knowledge of them as that of others of my age. But then I found that I had much to learn, and, what was more difficult, to unlearn.—J. WIGHTON.

TESTING POTATOES.

THE past summer, as we all know, was highly favourable to the growth and ripening of Potatoes, and, as a proof, we can get them at from six to eight shillings the twelve score. This is something like the old figure previous to the disease. Still the disease exists, and next year, or any number of years to come, it may be as bad as ever; and, although scientific experiments have been made, and commissions of inquiry have met to investigate the cause, yet the country at large is very little indebted to either of the above. Nevertheless, progress has been made; and I do believe that further progress can be made, if the same course be pursued in a more systematic manner.

On looking over the various lists given by Mr. Bennett, we find some very old favourite sorts gone quite out of cultivation; and a variety of new sorts have been produced, and most of them have some point to recommend them, at least in some local district. But, suppose a person about to commence Potato growing. He examines those lists, to select the varieties best adapted for profit, and he finds from fifty to a hundred sorts, all recommended as good croppers, good shape, good boilers, or good keepers: and all this may be quite correct. But, from my own experience, there is not ten per cent. of the varieties now in cultivation, that can be grown successfully in the same garden, or field, unless there is an unusually dry subsoil.

I think, therefore, it would be a great advantage to the growers of Potatoes generally, if the different sorts now in cultivation, also any other kinds that may from time to time be raised, were tested by a number of individuals in different parts of the country, and their merits, or demerits, placed in the hands of such a person as Mr. Bennett, for him to make a list of the sorts so proved, for general cultivation.

But how can it be done, some may say, better than they are already proved? Well, there are differences of opinion on the very best kinds. For instance, the *Fluke*. On some soils, with the same treatment, the *Fluke* is not grown to advantage. Very well, then; suppose Mr. Bennett were to say, through the medium of THE COTTAGE GARDENER, that he would undertake to be the centre, chairman, or president, of any number of individuals that were willing to assist him in carrying out any plan he may desire; and that he would send them a certain number of the best known kinds in cultivation, to be planted as he would advise; and that he would expect from them a correct account of temperature, by a self-registering thermometer, from the day they are planted, till they are lifted. Also, the gross weight of each sort, and the quantity of diseased of each sort, and any other particulars that the individual might think worthy of note; and, above all, the depth of rain that has fallen during the above time, or, better, from the beginning of the year.

This is only a rough sketch of my meaning. I have, no doubt, there are a dozen, or a score, of individuals that are quite prepared to take upon themselves the duty, with the expense attached. If Mr. Bennett, or any other gentleman, think it worth attempting, they will be able to place it in a much clearer light than I have done; and anyone desirous of making one of the number could do so, by intimating the same to the Editors of THE COTTAGE GARDENER. I should have said above, that it would be necessary to state full particulars of the character of the soil. Of course, the plan can be extended to fields in each neighbourhood, so that each individual may give a more general trial to his undertaking.—THE DOCTOR'S BOY.

METEOROLOGICAL NOTES — LINTON PARK, KENT.

1858.	Wind.—Number of days in each direction.								No. of days rain fell.	No. days frost	Rain in inches & parts.	
	E.	S.E.	S.	S.W.	W.	N.W.	N.	NE.				
January...	2	6	4	7	2	6	3	1	6	20	0.79	
February	3	7	1	..	..	4	..	13	6	19	.77	
March.....	2	2	..	5	4	9	5	4	9	15	.80	
April .....	..	6	2	2	5	1	1	13	11	4	1.93	
May .....	..	8	..	6	3	8	..	5	1	13	2	2.16
June	1	11	..	5	..	7	..	6	..	3	..	.67
July .....	..	1	1	12	2	8	..	7	..	16	..	2.69
August	6	7	..	3	3	4	..	8	..	9	..	1.20
September .....	..	9	1	13	1	2	1	3	..	10	..	1.19
October	1	3	4	5	..	4	6	8	..	9	4	1.45
November .....	..	7	1	2	1	..	1	18	..	10	22	.77
December	1	4	2	13	3	5	2	1	..	14	7	1.91
	16	71	16	73	24	58	19	87	1	116	93	16.33

The greatest amount of rain that fell in any one day was on July 10—0.83 inch. The longest period without rain was from June 7 to July 2. The highest range of the barometer was January 17—30.28. The lowest range of the barometer was November 27—28.55. The hottest days were June 15 and 16—thermometer 97°. The coldest night was that preceding November 23—thermometer 18°.

THE past year has been an unusually dry one, more especially the winter months,—December, 1857, only giving us 0.49 inch, which, with the little fall of the following three months, did not replenish the wells and small streams from which most of the water for domestic purposes is drawn. Consequently, there has been a deficiency in places never known to have been without that useful article before, while many places have been very badly off indeed, water being obliged to be carted a mile or more, for cattle and other purposes, as late as the end of November. Fortunately, however, for the most important crops, the rain which did fall was mostly in the growing months of summer. The most trying one for gardening, was June, which was both dry and hot; and on dry soils, where artificial watering was impracticable to any extent, Strawberries were a complete failure, as was the case here: although the plants bloomed and set as well as could be wished, they afterwards withered under the scorching sun and continued dry weather. Celery remained stationary for months. Hardy bush and tree fruits, of course, did not suffer to the like extent; and the hay crop, being benefited by the rains of May, was quite an average one. And in the flower garden, the genial rains of May gave the bedding things a start, which enabled them to withstand the heat, in a great measure, where they had depth of soil to work in. Annuals were, however, hurried quicker to seed; and some things,—as the Calceolaria, referred to before,—being checked in their growth, flowered out at every point; and before rains set in to create another growth, and furnish more flowering shoots, the season was gone. Nevertheless, the season must, on the whole, be regarded as a fine one: the dry winter favoured out-door operations; while April was more free from frosts than usual, as, likewise, was December. The whole, however, may be summed up somewhat thus:—

January, February, and March, all remarkably dry and fine, with less frost than usual, and also less fog.

April, mild, but dull and showery. No heavy rain.

May, early part cold, middle showery, end dry and warm.

June, hot and dry throughout. The 15th and 16th were the hottest days I have any registry of, and I have kept one for many years.

July, not remarkable, the latter part being dull rather than hot.

August, exceedingly fine harvest month. The rain was mostly at intervals of a week or more apart.

September, also dry and fine, the thermometer being 88° on the 14th.

October, this, also, dry, warm, fine, and more clear than usual.

November, sharp frost, with ice two inches thick in the middle of the month, with, however, very little rain. Foggy towards the end.

December, mild, but dull and foggy. Very little frost.

I believe the past year has been a dry one all over England. A friend, writing from Herts, reports a fall of twenty inches there the past year, instead of 30.39 in 1857. Others, more northwards, record a similar diminution, and I trust that some will report their observations in THE COTTAGE GARDENER. To such as keep regular registers, I may observe, that the average fall of rain, at this place, for the three years preceding the last one, has been upwards of twenty-four inches; that of 1857, being 24.33; 1856, 27.79; and 1855 (a dry year), 20.84. The past year was, as stated above, 16.33, one-third less than the average.—

J. ROBSON, Linton Park, Kent.

THE CHINESE YAM.

(DIOSCOREA BATATAS.)

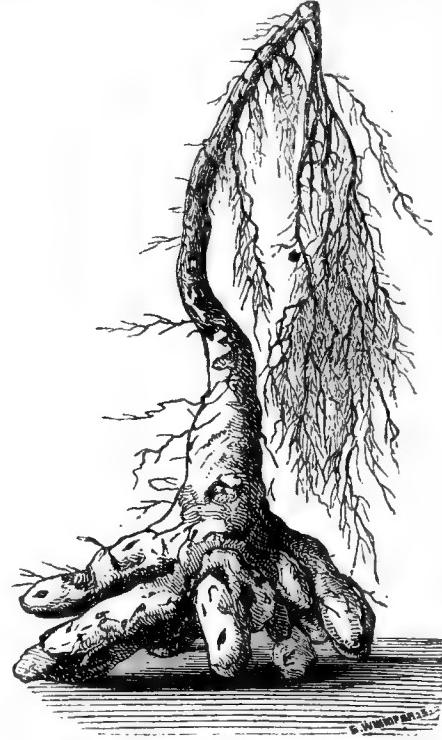
HAVING read many good accounts of this curious plant, and recommendations of it as an excellent substitute for the Potato, and having seen some of its odd-looking roots shown at the Horticultural Exhibitions, I felt a very strong wish to grow it myself. A friend gave me a small plant of it in a pot about the beginning of May, 1857. I had read Mr. Beaton's hints upon its culture in THE COTTAGE GARDENER, that it was quite hardy, and that a good soil, suitable for the Parsnip, was just the thing for the Yam also to grow in. All this I could very readily understand; but, having only this one little plant, I wished to be the more choice over it. With this view I selected a free, open situation, on the south side of the kitchen garden, near to a main walk, so that any little requirement should never escape my notice. Here a hole was dug out three feet in diameter, and to the full depth of our working soil. This was filled with rich fermenting material, which was almost three-parts rotten. This was well put together, and all the mould put on it that was dug out, making it some fifteen to twenty inches thick upon the manure—altogether, just the thing for a pot of hand-glass Cucumbers or Vegetable Marrows.

Upon this mound my little specimen of the Yam was planted. It was just putting up a little shoot, and it was also indulged with a hand-glass by the way of protection. As soon as the plant appeared to be fairly established and doing well, the glass was taken entirely away, and three or four sticks were stuck round it as a protection. Every attention was given it by way of earth-stirring, &c. As the season advanced, I could not fancy that such a slender, black Bryony-like plant would ever produce a very large root. Being told it must remain undisturbed for another year, this was done. The second season, the plant certainly put up very strong stems; these were carefully attended to, and supported by three or four strong pea-sticks, to which the stems soon attached themselves. Seeing such vigour, and fancying how it must be luxuriating in the bulk of decomposed manure, upon which it had been first planted, made me think, what an enormous root there would be by the autumn to take up. During the season, the plant formed a huge mass of stems, and produced lots of little, as I believe, imperfect, or male, blossoms.

After the stems of the plant had died down naturally, and towards the 1st of November, 1858,—making it of nearly two years' standing,—I was somewhat anxious to know the result. The thought was taken to go far enough round the root, and to work up to it with care, moving all the soil until the roots were visible, both the old one, which was formed in 1857, and the new one of 1858, running down side by side—not touching each other. The new root was produced from the very tip of the crown of the old one, where it put out a mass of long and stringy fibre. The old root put one in mind of an old Potato-set—perfect in form, but so decomposed, that it fell to bits on being touched. The new-formed root was still as firm as a post. Its knobby, or tuberous, part had forced its way into the rubbly bottom that forms our subsoil, which is composed of something of everything—such as broken bricks, flints, stones, tiles, bones, pieces of chalk, &c.—so that the pickaxe was required to relieve it. Here it struck me, whether it was an improvement in its growth or not? for about ten handsome, good-sized Kidney-Potato-shaped

pieces could be readily broken, or cut off from the main body, and might have been passed for Kidney Potatoes in reality, yet leaving the thick part of the body to be cut into suitable shapes for use. I certainly had expected to find the root very much larger, after two seasons' growth.

The accompanying is a very faithful representation of the Yam. It was about twenty inches long, and weighed about 4 lbs.



Now, having seen, recommended, and stated, that the natural habits and hardiness of this useful and excellent esculent are so well known, and that it is only to plant the sets a foot apart every way from each other, in a soil suitable to the Carrot and Parsnip; and, at about the same time as that sowing is performed, attend to surface-stirring the earth, and water a few times with liquid manure, and all will be well. The Parsnips early thinned out to the distance of a foot every way, and the earth-stirring, &c., attended to, until the plants became too large for the operator to work amongst them, most likely would give a fine and profitable yield. But if I were going to plant a hundred sets of the Chinese Yam, I should plant them in rows, running from north to south; and if I choose to allow them only a foot apart from set to set in the row, I should certainly allow them from two feet and a half to three feet apart from row to row; and, instead of allowing their twining stems to run about at will, I should have one or two strong pea-sticks, four to five feet long, placed to each plant for the stems to coil to. These sticks to be stuck in the ground six inches or so from the collar of the plant, so as not to injure its roots; and if two sticks, or even three, be used, I would place them so that their tops should come together. By this method of planting, sufficient room would be left for the operator to use his hoe, and let air and light shine in among the plants; and the whole would be in a tidy, workman-like manner to look at.—T. WEAVER, Gardener to the Warden of Winchester College.

POTATOES ON GROUND NOT FRESHLY MANURED.

I WAS glad to observe in a recent number, an article on the cultivation of the Potato without manure; and as I consider it the duty of every gardener, professional or amateur, to try every reasonable suggestion, in order to redeem this useful and excellent esculent from the destruction which threatens it, I offer no apology in giving my experience for the benefit of your readers.

I have grown Potatoes in my present garden for about ten years. They did not succeed for the first three or four years, owing to the clayey nature of the soil, although I limed and manured it well. I always used manure in planting them; but

losing (I think in the year 1854), nearly the whole of my crop from disease—which had been more or less the case for three years previous—I became so disheartened by failure, that I nearly determined to give up growing them altogether. However, I thought I would change my mode of planting, and “try again.” I procured a quantity of decayed leaves in the autumn, and these, with a good sprinkling of soot, I used instead of manure, in planting, and was gratified by an excellent crop nearly free from disease.

The following year (1856), I tried the same plan with equal success; and amongst the different varieties which I planted was the *Fluke*. The first three roots of these which I took up produced fifty-nine Potatoes, of good size; and the whole crop was excellent. In 1857 my crop was equally good, and free from disease. Last year, not having leaves, I again tried manure, and lost fully half from disease.

In 1857, having a spare piece of ground which I had manured for Cauliflowers, and having a few favourite Potatoes, I planted them in this plot, and every Potato was diseased, whilst those in ground unmanured were free from disease.

I am now thoroughly convinced that manure ought not to be used in planting; but if at all necessary for the land, it ought to be applied in the autumn.—T. H., *Romaldkirk, Yorkshire*.

FUCHSIAS BLEEDING.

I pruned and cut-in several Fuchsia plants early in January. They have continued to bleed as profusely as Vines ever since (now Feb. 5). I should observe that the house in which they are kept is a cool one, without fire heat of any kind; and that most of the plants have been, and are, stored under the stage. Can you tell me wherein I have acted improperly?—A SUBSCRIBER.

[This can only be accounted for by concluding that the roots have been kept in a higher proportionate temperature than the branches; and are, consequently, prematurely active. The bleeding will cease when the leaves develope. We never saw a Fuchsia bleed as you describe.]

THE TASMANIAN HIVE.*

As many of the readers of THE COTTAGE GARDENER may probably, contemplate giving this new application of the collateral principle a fair trial, I am induced to offer a few suggestions regarding its construction, and possible modification.

In the first place, I would strongly recommend wood as the only suitable material for the partitions. Zinc is far too good a conductor of heat; and the evil effects which may possibly result from two sides of what Nutt would have called “the pavilion,” being entirely formed of metal, can scarcely be overestimated.

The hinges connecting the end boards with the centre one would, I think, be much better omitted. A top board can be most easily replaced by sliding carefully from back to front, without killing a bee; but if attached by hinges, it must close like a box-lid, in which case a painful sacrifice of life can scarcely be avoided.

I would also suggest that the measurement at top from front to back, be increased from 10 inches to 11½ inches, or 11¾ inches, so as to suit the bars in use in the ordinary seven-bar boxes,—a point of no small importance. In this case, the width between the partitions might be advantageously diminished to 13 inches, accommodating eight bars.

Should a roof be required, I would recommend one formed of two widths of a nine-inch deal dowelled together, and the joint secured by the use of marine glue. If this be bevelled off at the sides and ends like a sarcophagus lid, and what is technically termed “throated” underneath, rain, &c., will be effectually excluded.

A beehive in full work is sometimes an interesting adjunct to our rural cemeteries, and in this case the “Tasmanian Hive” might not inappropriately be made to assume the true sarcophagus form.

I trust the talented inventor of the hive in question, will not deem me obtrusive in thus describing what I conceive to be improvements, in minor points; and if acceptable to the Editors of

THE COTTAGE GARDENER, I may hereafter submit to its readers a few hints on the construction of wooden hives, and bee-boxes, which have been suggested by many years' experience as—A DEVONSHIRE BEE-KEEPER.

[We shall be much obliged by your so doing.—EDS. C. G.]

FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 298.)

FIGS.

ANGÉLIQUE (*Mélitte*; *Madeleine*; *Coucourelle Blanche*).—Below medium size, about two inches long and an inch and three quarters broad; obovate. Skin yellow, dotted with long greenish-white specks. Flesh white under the skin, but tinged with red towards the centre. When well ripened, the fruit is of good quality, and perfumed. It requires artificial heat to bring it to perfection, and forces well.

Ashridge Forcing. See *Brown Turkey*.
D'Athènes. See *Marseilles*.

Aubique Violette. See *Bourdeaux*.

Aubiquon. See *Bourdeaux*.

Aulique. See *Violette Grosse*.

Barnissotte. See *Black Bourjassotte*.

Bayswater. See *Brunswick*.

De Bellegarde. See *Black Bourjassotte*.

BLACK BOURJASSOTTE (*Précoce Noire*; *Barnissotte*; *De Bellegarde*).—Large, roundish. Skin dark purple. Flesh red at the centre, and of good quality; but requires heat to bring it to perfection. September. Tree an abundant bearer.

BLACK GENOA (*Nigra*; *Negro d'Espagne*; *Noire de Languedoc*).—Large, oblong, broad towards the apex, and very slender towards the stalk. Skin dark purple, almost black, and covered with a thick blue bloom. Flesh yellowish under the skin, but red towards the interior, juicy, with a very sweet and rich flavour. End of August. Tree very hardy, and a good bearer.

BLACK ISCHIA (*Blue Ischia*; *Early Forcing*; *Ronde Noire*; *Nero*).—Medium sized, turbinate, flat at the top. Skin deep purple, almost black when ripe. Flesh deep red, sweet, and luscious. Tree hardy, and an excellent bearer; succeeds well in pots. August.

Black Marseilles. See *Black Provence*.

Black Naples. See *Brunswick*.

BLACK PROVENCE (*Black Marseilles*).—Below medium size, oblong. Skin dark brown. Flesh red, tender, very juicy, and richly flavoured. Tree bears abundantly, and is well adapted for forcing.

Blanche. See *Marseilles*.

Blue. See *Brown Turkey*.

Blue Burgundy. See *Brown Turkey*.

Blue Ischia. See *Black Ischia*.

BOURDEAUX (*Violette*; *Violette Longue*; *Violette de Bourdeaux*; *Aubiquon*; *Aubique Violette*; *Petite Aubique*; *Figue-Poire*).—Large, pear-shaped, rounded at the head, and tapering to a small point at the stalk. Skin deep violet, strewed with long green specks. Flesh red, sweet, and well flavoured. Only a second-rate variety, and the tree is so tender, that it is apt to be cut down, even to the ground, by severe frosts.

Bourjassotte Blanche. See *White Bourjassotte*.

Bourjassotte Noire. See *Black Bourjassotte*.

Brocket Hall. See *White Ischia*.

Brown Hamburg. See *Brunswick*.

BROWN ISCHIA (*Chestnut-coloured Ischia*).—Medium sized, roundish-turbinate. Skin light brown, or chestnut coloured. Eye very large. Flesh purple, sweet, and high-flavoured. Fruit apt to burst by too much wet.

* A full description of this hive appeared in THE COTTAGE GARDENER of the 25th of January last.

This is one of the best of figs, ripening in the beginning and middle of August. Tree an excellent bearer, pretty hardy, and bears as a standard in favourable situations. It forces well.

Brown Italian. See *Brown Turkey*.

Brown Naples. See *Brown Turkey*.

BROWN TURKEY (*Ashridge Forcing*; *Blue*; *Common Blue*; *Blue Burgundy*; *Brown Italian*; *Brown Naples*; *Long Naples*; *Early*; *Howick*; *Italian*; *Jerusalem*; *Large Blue*; *Lee's Perpetual*; *Murrey*; *Purple*; *Small Blue*; *Fleur Rouge*; *Walton*).—Large and pyriform. Skin brownish red, covered with blue bloom. Flesh red and very luscious. Tree very prolific, hardy, and one of the best for out-door culture, as a standard. August and September.

BRUNSWICK (*Bayswater*; *Black Naples*; *Brown Hamburgh*; *Clementine*; *Hanover*; *Madonna*; *Large White Turkey*; *Rose Blanche*; *Rose Beyronne*; *Peronne*; *Rose*; *Red*).—Very large and pyriform, oblique at the apex, which is very much depressed. Skin greenish yellow in the shade; violet brown on the other side. Flesh yellow under the skin, tinged with red towards the centre. Very rich and excellent. Middle of August. The tree is very hardy and an excellent bearer, and certainly the best for out-door cultivation against walls.

Chestnut-coloured Ischia. See *Brown Ischia*.

Clementine. See *Brunswick*.

Common Purple. See *Brown Turkey*.

Cyprus. See *Yellow Ischia*.

Early. See *Brown Turkey*.

Early Purple. See *Black Ischia*.

EARLY VIOLET.—Small, roundish. Skin brownish red, covered with blue bloom. Flesh red, and well flavoured. August. Tree hardy, and an abundant bearer; well adapted for pots and for forcing, when, according to Mr. Rivers, it bears three crops in one season.

EARLY WHITE (*Small White*; *Small Early White*).—Fruit roundish-turbinate, somewhat flattened at the apex. Skin thin, pale yellowish white. Flesh white, sweet, but not highly flavoured. August.

Figue-Poire. See *Bourdeaux*.

Fleur Rouge. See *Brown Turkey*.

Ford's Seedling. See *Marseilles*.

Hanover. See *Brunswick*.

Howick. See *Brown Turkey*.

Italian. See *Brown Turkey*.

Jerusalem. See *Brown Turkey*.

Large Blue. See *Brown Turkey*.

LARGE WHITE GENOA.—Large, roundish-turbinate. Skin thin, of a pale yellowish colour, when fully ripe. Flesh red throughout, and of excellent flavour. End of August. This is a variety of first-rate excellence, but the tree is a bad bearer.

Large White Turkey. See *Brunswick*.

Lee's Perpetual. See *Brown Turkey*.

Long Naples. See *Brown Turkey*.

Madeleine. See *Angelique*.

Madonna. See *Brunswick*.

MALTA (*Small Brown*).—Small, roundish-turbinate, compressed at the apex. Skin pale brown, when fully ripe. Flesh the same colour as the skin; very sweet, and well flavoured. End of August. If allowed to hang till it shrivels, it becomes quite a sweetmeat.

Marseillaise. See *Marselles*.

MARSEILLES (*Ford's Seedling*; *Pocock's*; *White Marseilles*; *White Naples*; *White Standard*; *D'Athènes*; *Blanche*; *Marseillaise*).—Medium sized, roundish-turbinate, slightly depressed, and ribbed. Skin yellowish white. Flesh white, very melting and juicy, with a rich, sugary flavour. Ripe in August. One of the best for forcing; and also succeeds well in the open air against a wall.

Murrey. See *Brown Turkey*.

Negro d'Espagne. See *Black Genoa*.

Nerii. See *White Ischia*. There is no fig bearing this name distinct from *White Ischia*; and the variety Mr. Knight introduced under that designation was the same. By the name "Nerii," is intended the "Nero," or Black Fig, of the Italians, and the variety Mr. Knight received under that name was evidently incorrect; the true *Fico Nero* being the *Black Ischia*, and not the *White Ischia*.

Nero. See *Black Ischia*.

Noire de Languedoc. See *Black Genoa*.

ŒIL DE PERDRIX.—Small. Skin yellowish, with a brownish tinge, having a small, bright red circle under the surface round the eye: hence the origin of the name. Flesh white, tinged with red, rich, and highly flavoured. Tree an abundant bearer.

PEAU DURE (*Peldure*; *Verte Brune*).—Medium sized, oblong ovate. Skin thick and tough, dark violet. Flesh purplish red, and well flavoured; but, when over-ripe, it acquires a little acerbity.

Pocock's. See *Marseilles*.

(To be continued.)

THE SCIENCE OF GARDENING.

(Continued from page 299.)

THE presence of one of the constituent gases of the atmosphere—oxygen, is also essential to germination. Ray proved that Lettuce seeds will not germinate in the exhausted receiver of an air pump, though they did so when the air was re-admitted; and, though the experiments of Homberg threw some doubt upon this conclusion, yet it was fully confirmed by the researches of Boyle, Muschenbroek, Boerhaave, and Saussure; for they showed that Homberg must have employed an imperfect apparatus, and their experiments embraced many other seeds than those of the Lettuce. So soon as pneumatic chemistry demonstrated that the atmospheric air is composed of several gases—viz.:—

Oxygen	21
Nitrogen	79

100

With about one per cent. of aqueous vapour in the driest weather, and about one part in every thousand of carbonic acid gas, the question then arose—Which of these gases is necessary for germination? and Scheele was the first to demonstrate that it is the oxygen. Achard afterwards proved that seeds will not germinate in nitrogen, carbonic acid, or hydrogen gases, unless mixed with oxygen; and though Carradore doubted the correctness of his experiments, his doubt was shown to be groundless, by the more accurate researches of Gough, Cruickshank, Saussure, and others.* Senebier carried his experiments still further; and has determined, that although seeds will germinate in an atmosphere containing one-eighth of its bulk of oxygen, yet that the proportion most favourable to the process, is one-fourth. Germination will proceed in an atmosphere of pure oxygen, but not so readily as when it is mixed with other gases. The same phenomena attend the incubation of eggs—they will not hatch in the vacuum of an air pump, nor will the process proceed so satisfactorily in any other mixture of gases than atmospheric air.

Radish seed refuses to grow when the oxygen in the air about it amounts to no more than one-fortieth part; and Lettuce seeds require in it, at the least, one-sixth: when it amounts to only one-eighth, they refuse to germinate. This is a reason why of all kitchen-garden seeds, the Lettuce is one of those which require the most shallow sowing.

It is necessary that the oxygen should penetrate to the cotyledonous or inner parts of the seed, as is evident by the changes which take place during germination: and it is further proved by experiment. When healthy seed is moistened and exposed in a

* Although seeds will not germinate in an atmosphere of nitrogen, yet they all absorb a small quantity of this gas when germinating. It is a constituent of most young roots, especially of their spongiodes, or extreme points. There is reason to believe that ammonia is formed during germination, and that it acts as a stimulant and food to the young plant. Seeds containing nitrogen, germinate more rapidly than seeds of the same genus which do not contain this gas.

suitable temperature to atmospheric air, it absorbs the oxygen only. This power of separating one gas from the others, appears to reside in the skin of the seed, for old seeds lose the power of absorbing the oxygen, and, consequently, of germinating; yet they will frequently germinate if soaked in a solution of chlorine in water—a gas which has the power of attracting hydrogen from its compounds, and releasing the oxygen, doing so in the case of seeds within their skin, as well as without. Humboldt and Saussure have also shown, that the application of chlorine to seed accelerates its germination; and Cress seed, which, under ordinary circumstances, requires some days to complete the process, they found effected it in no more than three hours.

The late Mr. George Sinclair, author of the excellent "Hortus Gramineus Woburnensis," informed us that he employed chlorine with singular success. He obtained it by mixing a tablespoonful of muriatic acid (spirit of salt), with a similar quantity of black oxide of manganese, and half a pint of water. After allowing the mixture to remain two or three hours, the seed is to be immersed in the liquid for a similar period, and then sown. Another, and, we consider, the most eligible mode of applying the chlorine, was also suggested to us by the same distinguished horticulturist. In this way, he said, he made tropical seeds vegetate, which refused to germinate by other modes of treatment. He placed the mixed ingredients, mentioned above, in a glass retort, inserting its bulb in the hotbed, and bringing its beak under the pot in which the seeds were sown, connecting it with the draining aperture of the pot. The chlorine gas is gradually evolved, passing through the earth of the pot to the seeds, accordingly as the heat required for the different species induces.

We are indebted to M. de Humboldt for a number of very curious observations on the property which chlorine possesses of stimulating, or favouring, germination. The experiments of M. de Humboldt were made in the first instance, on the common Cress (*Lepidium sativum*). The seeds were placed in two test-tubes of glass, one of which contained a weak solution of chlorine, the other common water. The tubes were placed in the dark, the temperature being maintained at about 59°. In the chlorine solution, germination took place in six or seven hours; from thirty-six to thirty-eight were required before it was manifest in the seeds in the water. In the chlorine, the radicles had attained the length of 0.0585 Eng. inch, after the lapse of fifteen hours, whilst they were scarcely visible at the end of twenty hours in the seeds submerged in water.—(*Flora Fibergensis subterranea*, p. 156.)

In the botanical gardens of Berlin, Potsdam, and Vienna, this property of chlorine has been made available to excellent ends; by its means many old seeds, upon which a great variety of trials had already been made in vain to make them sprout, were brought to germinate. At Schönbrunn, for instance, they had never succeeded in raising the *Clusia rosea* from its seed; but M. de Humboldt succeeded at once, by forming a paste of peroxide of manganese, with water and hydrochloric acid, in which he set the seeds of the *Clusia*, and then placed them in a temperature of from 143° to 167°.

This absolute necessity for the presence of oxygen, is a reason why seeds will not germinate if buried beyond a certain distance from the earth's surface; and why clayey soils often fail of having a good plant—an impervious coat of the clay enveloping the seed, and preventing the air's access.

M. Burger found that seeds of Rye, buried one inch below the surface, had their leaves above it in eight days and a half; whereas those at a depth of six inches, had only just sprouted at the end of twenty-two days.

But too-deep sowing inflicts another injury; though it be not at such a depth as to entirely prevent germination, it so consumes the matter of the seed in forming the useless elongation of stalk necessary to bring the leaves above the surface, that all further progress in vegetation has been prevented. M. Burger found that Rye seeds sown five inches and a half deep, forced their blades to the surface in seventeen days and a half, but these remained green only for six days and then withered; and that in every instance, the most shallow-sown seeds produced the most stalks. We have observed the same in the case of Kidney Beans, Windsor Beans, and Peas of various varieties; those seeds buried one inch and a half below the surface, invariably grew higher and were more prolific than those buried at double or even greater depths.

From Saussure's experiments we learn that, weight for weight, Wheat and Barley, during germination, absorb less oxygen than Peas; whilst these consume less than Beans and Kidney Beans.

This explains why, in proportion to their size, the two first may be sown at a greater depth below the soil's surface than the three last named, without vegetation being prevented.

It is chiefly the want of a due supply of oxygen that forbids seeds germinating, which are buried at great depths; seeds thus deposited, or similarly excluded from the air in the Egyptian mummy cerements, will often retain their vegetative power for an apparently unlimited time. Hence, earth taken from far below the surface will often become covered with Charlock. This is an oleaginous-seeded plant; and such, when thus excluded from the air, retain their vitality most pertinaciously for reasons already assigned.

There are some seeds, Peas for instance, and the seeds of aquatic plants, which have the property of germinating under water. Some observers have, from this fact, come to the erroneous conclusion that atmospheric air, and consequently oxygen, were by no means necessary to germination. Saussure has explained this anomaly by referring to the constant presence of air in a state of solution in water. In fact, having placed some seeds of the *Polygonum amphibium* under water, deprived of its air by long-boiling, Saussure proved that germination could not take place.—(*Recherches chimiques, &c.*, p. 3.)

Under like circumstances, the quantity of carbonic acid generated in a given time, is by so much greater, the larger the quantity of oxygen in the atmosphere which immediately surrounds the germinating seed. Carbonic acid gas is of all the gases which have been tried, that which is most unfavourable to germination; and one way of hastening the process, is to place, under the receivers which cover the seed, some substance capable of absorbing that gas as fast as it is formed—quickslime, for example. By this arrangement, the growth of the rootlet is sensibly accelerated.—(*Idem*, p. 26.)

Inasmuch as seeds during germination yield carbonic acid to the atmosphere, it is quite obvious that they must lose some part of their original weight. And this they do, in fact; but the loss experienced by seeds which have germinated, is always greater than that which would have resulted from the removal of carbon which takes place. Saussure attributed this excess of loss to the volatilisation of a portion of the water which entered into the composition of the seed.—(*Idem*, p. 20.) According to Saussure, therefore, the phenomena of germination resolve themselves into the diminution of carbon, and of the elements of water. It is, nevertheless, doubtful whether the chemical actions are so simple as this: we know, for example, that M. Becquerel considered the acid which appears during germination, as acetic acid. There is certainty of the formation of an acid during germination; to prove its development, it is sufficient to make a few moist seeds sprout on blue litmus paper, which speedily acquires the permanent red indicating the presence of an acid; and if seeds whilst sprouting are surrounded by lime, in powder, it is converted into acetate of lime.

So far are plants at their first germination from being benefited by the application of stimulants, as is supposed by the advocates of those menstrua, that if the air supplied to them during that process, is contaminated by stimulating vapours, such as that of sulphuric æther, camphor, spirits of turpentine, or ammonia, germination is always in some degree retarded and injured.

How oxygen operates in aiding the seed to develop the parts of the embryo plant we cannot even guess—we only know that most seeds have more carbon (pure charcoal), in their composition than other parts of their parent plant; that the oxygen absorbed by the seeds, combines with a portion of that extra carbon, and is emitted in the form of carbonic acid. These are the attendant phenomena, but we can penetrate the mystery no farther.—J.

(To be continued.)

TO CORRESPONDENTS.

RAIN-WATER CASK (J. B. C.).—We recommend you to char the inside of the gas-tar cask before you use it for this purpose. Coal ashes are the dust remaining after the coal has been burnt. Did you ever hear of any ashes that did not imply a previous burning?

TAN AS A MULCH FOR STRAWBERRIES (An Old Subscriber).—It has been often used to keep in the moisture of the soil, and to save the berries from being rain-splashed. No solvent for leather is known. Sulphuric acid is the best fixer of ammonia in liquid manure.

CONSERVATORY CLIMBERS (J. L.).—Thanks for the sight of the crossed Veronica. It must make a beautiful evergreen, somewhat like the Minorca Box, when not in bloom. As for extra-fine climbers for the conservatory, there are no new ones, nor for growing in a warmer house, or

pit, at the end or back of a conservatory, for their heads to be introduced for the summer months into the conservatory; but the best feature of conservatory decoration may be expected from that mode, judging from the little that already has been effected. All the best stove Passion-flowers, many fine Ipomoeas, Bignonias, and Echites, could, no doubt, be so grown. The violet-pink, and scarlet Bouganvilleas, which are just now coming into bloom on the open walls in Portugal, would, most likely, do here in the way you propose. The *Solandra grandiflora*, which spreads as much as a Glycine, in Malta, would also have a good chance that way, and would vie with the Beaumontia itself when in bloom. But what we want, is actual experience; and without the proper conditions, gardeners can advance no farther than we have been for the last dozen years, on that point.

SLATES OVER MULCH (*E. C.*).—This plan, “to keep birds from scattering it about,” will not be injurious to the Roses; but we should prefer covering it with earth.

KADSURA JAPONICA (*M. F.*).—Your plant is *Kadsura* (not *Kassura*) *Japonica*. Our correspondent grows it against a south wall at Belfast. It has never been covered during the winter. The soil, light loam and peat.

STOCKING AN AQUARIUM.—“Where can I procure plant to stock a fresh-water aquarium, or to fill a small pond?” Carter, Turner, or Campbell, of Dublin, will not undertake to do it; and this county Cumberland, is too poor in specimens to reward the labour of searching. Ornamental ones required.”—M.

PEA HURDLES (*A Country Subscriber*).—We have no experience in cultivating Peas in drills so wide as six inches. Even for drills two inches wide we use hurdles on each side; but we make two drills one foot apart and reaching directly across the kitchen garden. Your question about opening top lights needs inquiry.

DAPHNE INDICA, &c. (*Clericus*).—Your letter shall be answered fully next week. It requires more than a slight reply.

REMOVING CRYPTOMERIAS AND YEW (*A South Yorkshire Subscriber*).—The best time for their removal is the beginning of October; but may be done now, in mild, moist weather.

NAMES OF PEARS (*A Subscriber to THE COTTAGE GARDENER*).—1. Passe Colmar. 2. Jean de Witte. 3. Easter Beurré. 4. Passe Colmar.

NAMES OF PLANTS (*Flora O'M.*).—The little crimson-tipped flower is the beautiful *Oxalis versicolor*. The white-flowered greenhouse plant is not a Chrysanthemum, but *Pyrethrum frutescens*. A very desirable plant at this season. Where can a plant of it be bought?

THE POULTRY CHRONICLE.

POULTRY SHOWS.

FEBRUARY 16th and 17th, 1859. POULTON-LE-FYLDE. *Sec.*, J. Butler. FEBRUARY 23rd and 24th. BOLTON POULTRY, PIGEON, AND CANARY SHOW. *Secs.*, William Chester and Robert Greenhalgh, Bolton. Entries close February 17th.

MARCH 15th, 16th, and 17th. SHROPSHIRE. *Sec.*, T. W. Jones, Church Street, Wellington, Salop.

MAY 25th and 26th. BEVERLEY. *Sec.*, Francis Calvert, Surgeon, &c.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. *Director*, S. Pitman, Esq.

N.B.—Secretaries will oblige us by sending early copies of their lists.

DISCURSIVE POULTRY PAPERS.

(Continued from page 303.)

ALL birds of the gallinaceous tribes should have to seek their food, in order that they may pick it grain by grain, and in the search come across numerous trifles that we know not if we see them, but which nature tells them are good for them. Their crops should not be full of corn alone, but of the dirt picked up with it, with pieces of clover leaf and grass, with the animalculæ that swarm on the moist surface of the earth: above all, with small stones; and the meal should last a long time. For this reason, all troughs and vessels to hold food are bad. A fowl is not intended to swallow a mouthful at a time, and has no grinders to assist digestion. When such vessels as I have spoken of are used, the cropful, which should have been the work of two hours and the reward of long and careful seeking, is accomplished in two minutes; and worse than all, the food swallowed is scrupulously clean. It stands to reason that discomfort follows, and then the poor bird goes to the water; and instead of one drop daintily taken, and the head raised after it, the beak is inserted in the water, and it tries to drink a draught. All this is against nature, and lays the foundation of all diseases. The birds have no disposition to prowl, no real appetite for food, and squat about useless and pitiful objects. They should never be fed to repletion, but should leave off hungry. Your fowls are now cured; and if you will follow nature as you saw it on my Wheat stubble, they will remain well.

I will not deny you the pleasure of giving them odd pieces of bread, or anything else, in order that they may become attached to you; but let them be in that condition that it will also be a pleasure to them. *Do not supply imaginary wants.* Indulgence in fowls, as in men, causes sickness; and as you seldom see a

farm labourer subject to gout, so you never see a cottager's fowls suffering as yours were when I took them in hand.

The lesson was not thrown away, and the reward soon came. They looked like Pheasants; and, when the moulting season was over, they took to laying. Visiting among the circle that had been formed in the course of a few months, sundry pieces of plate had been seen gained by fowls, and pretty pieces of furniture bought with the produce of a pen shown and claimed at Birmingham or elsewhere. We do firmly believe the love of dealing is inherent in man. It may be Protean—it may assume all manner of shapes—but there it is. Money is not generally plentiful among boys at school, but bartering is; and later in life some carry it into trade, which is to furnish the livelihood; in others, it negotiates the rent of farms, or it expends itself on sheep, or oxen, or horses. It takes curious vagaries. We once knew a very rich man who could not resist the temptation of buying the cheap worthless sponge carried about the streets by boys: another was continually tempted by bargains in the way of cheap umbrellas. When they died, mysterious cupboards were opened; imagination had been taxed for years; speculation had worn itself out in guessing the concealed treasures. In one case it was sponge; in the other umbrellas. We will note only one more peculiarity. There are men who are princely in giving, and whose generosity as friends or hosts knows no bounds; but try to have a deal with them, and they are the veriest screws (pardon the expression), you can meet with. In trading they will skin you alive.

This is a digression. We would not for a moment infer that the young lady whose poultry progress has formed the basis of some of our papers had any idea of this sort; but she became haunted with the notion that she, too, might win prizes and have pens claimed. It beset her continually; and everything she wanted and could not have, she was going to get from her poultry. To compass it, she must have early chickens. Her fowls were in capital condition, and there was no difficulty. On the twelfth of January there were thirteen hatched. The weather was cold: what was she to do? There was an old summer-house in the garden which was never used: that was too far from the house. There was an empty stall in the stable; but the man showed so little alacrity in falling into her views, she would not press it. There was her first poultry-house, the red-brick one with the brick floor; it had not been used—she would put them there. She spread a carpet on the floor, and the hen was installed. But they did badly; and she resolved to consult her oracle, Mr. Taplin. She had not done so of late, because her sisters teased her about him. Teasing is a very bad habit in families; and steps have been taken through teasing or from teasing, that have given a sombre tinge to a life.

(To be continued.)

CHESTERFIELD POULTRY SHOW.

(Communicated.)

THIS Show was successful in every point of view; and the prizes and all bills, we know, are paid, leaving a balance in the hands of the Treasurer. The classes most worthy of note, were the Game of both classes. Single Game Cocks (54 entries); Dorkings; Silver-spangled Hamburgs; Gold-pencilled Hamburgs; Polands; Bantams (Laced); Ducks, &c. Pigeons were tried as an experiment, and some very good ones were there. There was a total of 451 pens, which is very good for a second Exhibition.

EXTENSIVE ULCERATION IN A GAME FOWL.

I FEEL quite secure, that as you have had a most extensive experience in poultry matters, you may take some little interest in the fate of a favourite hen, which I now proceed to lay before you.

The hen in question is a Game hen, of a rare breed, being—as the friend who gave her to me when she was only four months old, pithily described her,—“as thoroughbred as *Eclipse*.” I lent her to a game-keeper two years ago to hatch Pheasants, and she was returned to me last September. On examining her, I perceived a considerable protuberance on her breast, parallel with her crop. I fancied that she must have received some injury there; but, on making the most minute inquiries, I could not discover that such was the case. However, the tumour got larger every day, and at last its weight so seriously inconvenienced the

poor bird, and drew so largely upon her system, as to render her as thin as a skeleton, that I decided on attempting its removal. I accordingly opened her skin by a cross cut, and found immediately under it, and firmly attached to the flesh of her breast, a callosity of the size of a duck's egg. With the aid of a lancet and a sharp penknife, I removed it, and it weighed a trifle over two ounces. It was permeated by minute blood vessels; consequently there was a very considerable effusion of blood, and the poor hen was reduced to a very debilitated condition. But I sewed up the skin, and kept her on soft, cooling diet, and she rapidly recovered both strength and flesh. This operation was performed on the 12th of December, 1858.

The bird went on very well till about the 14th of January, when I observed indications (chiefly in the querulous tone of her voice), that all was not as it should be. I was anxious to save my hen, and as her appetite continued excellent, I hoped by my very great care to do so; but on the morning of the 18th of January I found her dead. Nothing now remained but to ascertain the cause of her disorder, if possible. On skinning her I discovered the whole surface of the flesh of her neck, higher up than the part where I operated, to be coated with a thick layer of purulent coagulation. Beds of the same had formed in the sockets behind her eyes, and had pushed forward her eyes themselves, in a way for which, during her life, I could not account. Internally, her larynx and windpipe were coated with the same pus, and one or two small concretions (evidently of the same pus hardened), were taken from various parts. The lining of her crop, her gizzard, her ovaries, and her other viscera, were all in a healthy state; but a small vein near the occiput, and another under the left wing, were distended with black blood. So that I conclude that the immediate cause of death was apoplexy; and the condition of the brain itself verified this conclusion. But I am puzzled to find the cause of this extensive accumulation of matter. I have kept fowls these thirty years, and have had all sorts of diseases under my care; but this is a case that I do not understand. Can you throw light on it?—W. H. B.

TRIMMING SPANISH FOWLS.

In your "Letter Box" of the 1st inst., in reply to a correspondent under the above heading, I observe you say, "That from inquiries, we are able to state positively, neither the cock in the single class, nor in the chicken prize pen, were trimmed, or in any way altered from their natural state."

The above paragraph, I presume, applies to the awards at the Crystal Palace. You must be labouring under a very strong misapprehension; as I am prepared to prove, most positively, that both the Spanish cocks referred to were trimmed. In fact, the servant of the owner of the birds admitted to me that such was the case, and an examination of the birds will prove they were trimmed up to the comb.

Now, I ask, if as you say, "Many birds were trimmed, both at Liverpool and the Crystal Palace, and they were very properly disqualified," why were the birds which are the subject of this letter, permitted to win first prizes, when others were disqualified? —A SPANISH EXHIBITOR.

[It is quite true that we inquired about the alleged trimming of the Spanish cocks at the Crystal Palace Poultry Show. The reply was from a first-rate authority, and negatived the charge. The letter we now publish comes from a gentleman, who adds, in an accompanying note, "If any denial appear from the owner of the pen, I authorise you to give up my name." We readily publish this note, therefore, because it is very evident, from other communications which have reached us, that the trimming of Spanish fowls for exhibition is an increasing practice.—EDS.]

PRESTON AND NORTH LANCASHIRE POULTRY EXHIBITION.

LAST week we gave the list of the awards of the Judges, and we will now append a few remarks with which we have been furnished. The birds exhibited were numerous, and first-rate; but it was not to be expected that the awards would be satisfactory, when one of the Judges was a resident where the Show was held. We except from the general dissatisfaction the awards in the Pigeon classes.

It is to be regretted that the Committee persist in having two

tiers of pens. The birds in the lower tier cannot be seen. Thus one of the best pens of *Game* was behind a pillar, and were unnoticed. The *Dorkings* were very superior; and the prize pens belonging to Capt. Hornby were much admired. The Secretaries, to whom much praise is due, inform us that the Judges regretted that there was no prize for *Turkeys*, as those sent by Miss Ffarington, of Worden Hall, Leyland, richly deserved a prize. The *Spanish* were good classes. *Single Game Cock* class excellent, but badly judged. *Game Bantams* excellent. We have so recently remarked upon the same birds, as they appeared at Liverpool, that we need not repeat our comments; nor should we have added more, if we had not received the following from a correspondent, who, in an accompanying note, furnishes us with her name:—

"Relying fully on the good faith of the Committee of the Preston Show—as advertised in the schedule sent to me—"that all specimens with clipped, drawn, or trimmed plumage will be excluded from taking prizes,"—the more so, as I read just below, in large type, the instructions on this point to the Judges—I sent my birds *untrimmed*. What was my astonishment to see, that all the birds in the Spanish classes, or nearly so, to whom prizes had been awarded, were trimmed to an extent I never saw equalled. So that the birds which were excluded last week at Liverpool from this cause, at Preston were distinguished in the prize list. That the Committee did not keep faith with myself, and others, who gave them credit for what they stated, being carried out, admits of no question; and, as I do not intend for the future, to exhibit under such *disadvantages*, or to let, by the trick of trimming, much inferior birds to mine figure in the prize list, I wish to ask you to devise a plan of settling the question, as to how Spanish fowls are to be shown: otherwise, I shall protect myself (my yard being sufficiently extensive), by sending to every exhibition I care to support, two pens of birds—one *trimmed*, the other *untrimmed*."—A LADY.

ULVERSTON POULTRY EXHIBITION.

THIS Exhibition took place on Wednesday and Thursday, the 9th and 10th inst. We will give a report of the separate classes next week. The following were the awards.—

SPANISH (Black).—Cup, R. Teebay, Preston. Second, W. Sylvester, Market Hall, Sheffield. Highly Commended, Miss Hyde, Ashton-under-Lyne. Commended, C. T. Nelson, Birmingham.

DORKING (any colour).—First, Capt. W. W. Hornby, Knowsley, Prescot. Second, T. Ullock, Quarry House, Windermere. Highly Commended, J. Robinson, Vale House, Garstang.

GAME (Black-breasted and other Reds).—Cup, G. W. Moss, the Beach, Aigburth, Liverpool. Second, W. Newby, Lawrence House, Milnthorpe. Highly Commended, A. Sutherland, Burnley; F. Atkinson, Lord's Plain, Milnthorpe. Commended, J. Hindson, Barton House, Everton, Liverpool.

GAME (Whites and Piles).—First, F. C. Ellison, Kendal. Second, F. Atkinson, Lord's Plain, Milnthorpe. Commended, Bird and Beldon, Bradford.

GAME (any other variety).—First, W. Brocklebank, Ulverston. Second, A. Sutherland, Burnley. Commended, J. Dixon, Bradford.

COCHIN-CHINA (any colour).—Cup, H. Harvey, Sheffield. Second, H. P. Watson, Preston.

HAMBURGH (Golden-pencilled).—First, Carter and Gaultier, Poulton-le-Fylde. Second, C. R. Titterton, Birmingham. Highly Commended, J. B. Chune, Coalbrookdale; J. Dixon, Bradford.

HAMBURGH (Silver-pencilled).—Cup, T. Keable, Rowdefield Farm, Devizes. Second, J. Dixon, Bradford. Highly Commended, J. Robinson, Vale House, Garstang. Commended, G. Griffiths, St. Swithin Street, Worcester.

HAMBURGH (Golden-spangled).—First, J. B. Chune, Coalbrookdale. Second, S. H. Hyde, Ashton-under-Lyne. Highly Commended, J. Dixon, Bradford; W. W. Ruttlidge, Storth End, Kendal. Commended, W. W. Ruttlidge.

HAMBURGH (Silver-spangled).—Cup, J. Dixon, Bradford. Second, J. Robinson, Vale House, Garstang. Highly Commended, R. Benson, Ulverston; Bird and Beldon, Bradford; R. Teebay, Preston. Commended, A. Sutherland, Burnley; J. B. Chune, Coalbrookdale.

POLAND (any colour).—Cup, J. Dixon, Bradford. Second, G. Ray, Ivy Cottage, Minestead, Lyndhurst. Highly Commended, J. Dixon, Bradford; J. Robinson, Vale House, Garstang; Bird and Beldon, Bradford. Commended, A. Sutherland, Burnley.

BANTAMS (Gold and Silver-laced).—First, T. H. D. Bayley, Ickwell House, near Biggleswade. Second, J. Dixon, Bradford. Commended, T. Robinson, Ulverston; Mrs. A. G. Brooke, Vale View, St. Bees.

BANTAMS (any other variety).—Cup, T. H. D. Bayley, Ickwell House, near Biggleswade. Second, J. Dixon, Bradford. Highly Commended I. Thornton, Heckmondwike, near Leeds; A. G. Brooke, Vale View

St. Bees; H. P. Watson, Preston; Bird and Beldon, Bradford; W. Sylvester, Sheffield; J. Billyeald, Hyson Green, Nottingham.

DUCKS (White Aylesbury).—Cup, J. Abbot, Kendal. Second, J. Dixon, Bradford. Highly Commended, T. Emett, Preston.

DUCKS (Rouen).—First, T. Robinson, Ulverston. Second, J. Dixon, Bradford. Commended, T. Robinson, Ulverston; Kendall and Barwick, Barrow.

DUCKS (any other variety).—First and Second, J. Dixon, Bradford. Highly Commended, F. W. Earle, Eadenhurst, Prescot.

EXTRA PRIZES.

GAME COCKS.—Cup, A. Sutherland, Burnley. Second, J. Hindson, Barton House, Everton, Liverpool. Third, G. W. Moss, the Beach, Liverpool. Highly Commended, Kendall and Barwick, Barrow; E. Swainson, Nibthwaite. Commended, R. Gelderd, Ulverston; J. C. James, Liverpool; J. Hindson, Barton House, Everton, Liverpool.

GAME CHICKENS (any variety).—First, A. Sutherland, Burnley. Second, J. Hindson, Liverpool. Highly Commended, G. W. Moss, Liverpool; F. Atkinson, Lord's Plain; W. Newby, Lawrence House, Milnthorpe; T. Robinson, Ulverston. Commended, H. P. Watson, Preston; R. Pendlebury, Radcliffe.

SPANISH CHICKENS.—Prize, Miss Hyde, Moss Cottage, Ashton, Highly Commended, C. T. Nelson, Birmingham; H. Harvey, Exchange Street, Sheffield.

GAME (Furness Prize).—First, E. Swainson, Nibthwaite. Second, T. Robinson, Ulverston. Third, M. J. Cranke, Urswick. Highly Commended, W. Robinson, Ulverston. Commended, J. Kendall, jun., Gleaston; C. B. Kennedy, Fair View, Ulverston; J. Boulton, Ulverston; W. F. D. Dickinson, Ulverston.

JUDGE—Edward Hewitt, Esq., Spark Brook, Birmingham.

BRAHMA POOTRAS—BLACK HAMBURGHHS.

HAVING kept Brahma Pootras from their first introduction, and valuing them much, I was pleased at the remarks of your correspondent, "J. K. F.", in your No. of January 25th. The writer of that article, I make no question, is as well qualified to give an opinion on the merits of these birds as any man in England; and all he says in their favour, I would, from my own experience, readily endorse. As I am but an amateur, and, possibly, not so well skilled in details as I ought to be, I wish to ask through your columns—1st. Are the cocks of this breed inadmissible at Poultry Shows, unless they have a pea comb, or rather the mean-looking triple comb I observed at the Crystal Palace Show last month? And are birds with the handsome, plain, single comb, to be excluded? If, as some pretend, the Brahma is not a distinct breed, how is it that they breed *always true*, as I can most assuredly aver that they do? Are black Hamburgs a distinct breed, or are they not? If they are, how is it that no distinct class has been yet allowed them? They also breed true, and possess all the genuine characteristics of that class of birds—viz., the Hamburgs.—RED ENSIGN.

DUCKS WITH FLIGHT FEATHERS REVERSED.

I THINK it may not be out of place, to offer a few remarks on the ducks with flight feathers reversed, which were highly commended at the Crystal Palace Show, and noticed in THE COTTAGE GARDENER, January 18th, as being grotesque.

These ducks were sent to Linton Park about a year ago, as a present from a gentleman, who believed them to be a distinct breed; but I have not, as yet, been able to ascertain their origin. I have been told that they do occasionally come with one wing only turned out; but it has never occurred here. The duck, in March and April, laid thirty-five eggs, which are rather smaller than those of the Aylesbury. She sat on eighteen eggs, and hatched seventeen birds. From different causes, ten only were reared: these *all* came with their wings turned out, but they varied in colour. Of the drakes, some were dove-colour, and some chocolate. The ducks were brown and nearly black. Their peculiarity of wing begins to appear at the end of a fortnight.

In August, the ducks gained a first prize in the class for "any other breed," at Maidstone. In October, they were sent to one of the highest authorities in poultry matters, and he pronounced them, as far as he could judge, a distinct breed, and advised their being sent to the Crystal Palace Show, where they gained the high commendation alluded to above. The peculiarity in their wings prevents their flying. They are exceedingly pretty for ornamental water; as a number of them together have the appearance of a miniature fleet. I understand they are found excellent for the table, and that their eggs are very good.

I must apologise for taking up so much space in your valuable

paper, but I was anxious to show that they have useful, as well as ornamental, qualities to recommend them.—J. ROBSON, Linton Park, Staplehurst.

SAGACITY OF THE RAT.

I HAVE been much amused with your description of the "Cheap and most effectual Rat-trap." Ingenious it certainly is; and effectual it will prove for a time,—and for a time only,—if all rats are as cunning as those with which I have made acquaintance. My garden is bordered on one side by a deep fosse. In the bank opposite to us was a large colony of rats. They were no annoyance to us, as they never attempted to scale the wall which formed our side of the ditch. A country lad came into our service; and it was contrary to his notions of propriety to leave the creatures unmolested. He procured some fine wire; and with it placed snares in their runs, and at the entrance of their holes. So expertly he did it, that I suspected they were not the first gins he had set. Great was his success for a while. I have seen him drive down the garden walk two or three rats at a time, and they obeyed much more readily than pigs. After a very few days no more rats were caught: how could it be? They must come out of their holes to eat and drink; sharp eyes were on the watch; and the cunning rogues were repeatedly seen to take the wire in their mouths, and coolly walk out with it. Moreover, they never forgot the lesson they had learned. We have set a trap in our cellar. They know it is a trap for them as well as we do. We have covered it entirely, and for a considerable space round it, with bran. They begin to eat at the outer edge of the bran, gradually narrowing the circle, till they leave not a grain except on the plate of the trap. Foxes must, I think, bow to the superior cunning and sagacity of the rat.—QUIS.

NATIONAL COLUMBIAN CLUB.

THIS Club held its second annual Show in the large room at Anderton's, Fleet Street, on Tuesday, the 8th inst. The room, which was decorated with the flags of Great Britain, Prussia, France, and Sardinia, looked very showy; and the number of visitors was very numerous.

The Pigeons most admired were those of Mr. Adkins, of Birmingham, who contributed more than twenty pairs: they consisted of *Powters*, *Carriers*, *Owls*, *Trumpeters*, *Fantails*, *Nuns*, &c. Mr. H. Weir's beautiful pen of *Fantails* was the admiration of all the visitors. Mr. Fry, of Brighton, sent some of his best *Carriers*. Mr. Hayne exhibited some splendid *Blue Powters*. Mr. Tegetmeier also contributed *Powters* and some capital *Dragons*. Messrs. Southwood and Holmes showed some splendid *Carriers*. Mr. Maddeford, of Staines, exhibited his *Yellow Bars*, which are wonderful birds. This gentleman's collection of *Jacobins* was also well worthy of praise. Mr. W. Wrench Towse had some good birds in his pen, which consisted of *Owls*, *Yellow* and *Blue Jacobins*, *Trumpeters*, *Sabians*, &c. Mr. Griffith also sent some good *Swallows*, *Beards*, *Almonds*, &c. Messrs. Thomas Esquillant and Percival's *Short-faced Tumblers*, *Owls*, &c., are so well known, that it is needless our saying more.

Several members brought up some of the results of their victories, in the shape of silver cups, medals, &c., which did the Club much credit.

Most of the members exhibited, and the number of birds shown was more than 280. We had almost overlooked the *Runts*, which were well supported here by Mr. Jones, Mr. Towse, and Mr. Bridges. Mr. Jones sent a very good collection of *Trumpeters*.

The members dined together in the evening.

PARTRIDGE-COLOURED CHICKENS.—A guinea subscription is again opened for giving two extra prizes for these chickens at the Birmingham Show of the present year. Mr. C. Felton, of Erdington, near Birmingham, is the Secretary and Treasurer. We have seen a list of fourteen subscribers.

OUR LETTER BOX.

CAGE BIRDS (J. Reeves).—There is no really good book in English about them. Your complaint against Beckstein's is quite true. We may publish some more papers upon the subject. We sent the number you required.

BOOK ON POULTRY (A Novice. W. G. C.).—The best book with coloured plates is "The Poultry Book," by Mr. Johnson, and Mr. Wingfield.

WEEKLY CALENDAR.

Day of M'nth Week.	Day of Week.	FEBRUARY 22-28, 1859.	WEATHER NEAR LONDON IN 1858.						Moon's R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.				
22	Tu	Lily of the Valley.	29.886—29.727	40—23	E.	—	3 af. 7	25 af 5	morn.	19	13 47	53
23	W	Acacia armata.	29.747—29.661	42—32	E.	—	1 7	26 3	41 0	20	13 39	54
24	Th	ST. MATTHIAS.	30.177—29.979	43—24	E.	—	7	28 5	56 1	1	13 30	55
25	F	Bossiaea ovata.	30.284—30.172	40—23	N.E.	—	57 6	30 5	7 3	22	13 21	56
26	S	Camellia Colvilli.	30.099—29.992	36—29	E.	—	53 6	32 5	6 4	23	13 11	57
27	SUN	SEXAGESIMA SUNDAY.	29.914—29.788	40—25	N.E.	—	58 6	34 5	51 4	24	13 9	58
28	M	Carnations.	29.706—29.604	40—25	N.E.	—	51 6	35 5	24 5	25	12 49	59

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during temperatures of these days are 47.5° and 33.2°, respectively. The greatest heat in the last thirty-two years, the average highest and lowest on the 21st, in 1855. During the period 118 days were fine, and on 106 rainy days, 60°, occurred on the 27th, in 1848; and the lowest cold, 10°, on the 21st.

GARDENING OPERATIONS FOR THE WEEK

KITCHEN GARDEN.

LEVELLING the ridges and preparing the ground for the main crops must be carried on whenever the soil is dry enough to admit of being trodden with the feet. It is advisable to get out being too much consolidated. It is a workable condition, by taking advantage of every fine day for the purpose, before sowing the main crops. But, on light, dry soils, that are more liable to suffer from drought, the sooner the crops are got in the better, that they may be well established, either to resist the ill effects of a very dry season, or to profit by a wet one.

BEANS, BROAD.—Sow, or to profit by a wet one. *Sword Long-pod*, for Taylor's Broad Windsor, or quantity by the main crop, regulating the plant out those in pots, or boxes; earth them up after planting.

BROCCOLI.—Sow a little *Walcheren*, in pots or boxes, under glass.

CABBAGE.—Sow a little seed of the following sorts:—*Drumhead Savoy*, *Atkins' Matchless*, *Large Blood-red* (for pickling); and *Early Dutch Twist*, which is a small sort, may be planted as closely together as Lettuces, and is sweet and mild.

CAULIFLOWERS.—Prick out the young seedling plants either on a warm border, or on a gentle hotbed; to be protected with hoops and mats. Where there are more than three plants under each hand-glass, they should be thinned out to that number, and planted on a rich piece of ground.

CELERY.—Prick out the young plants of the first sowing, as soon as they can be handled, on a slight hotbed, under hand-lights, or protected with hoops and mats. Make another sowing of both *Red* and *White*. *Cole's Crystal White* is a fine, new sort, which generally remains in good condition longer than others; and *Manchester Red Giant*.

CUCUMBERS.—Add fresh soil as the roots of the plants appear on the outside of the hill. Lay it close to the inside of the frame for a few days before it is required, that it may get warm. Put in more seed for successional crops.

LETTUCE.—Prick out the young seedling plants, as advised for Cauliflowers.

PARSLEY.—Sow Treble-curled.

PEAS.—Plant out these in pots, or boxes, on a south border. They should be planted middling thin—neither too thick nor too thin—in the rows; and, if the border is stiff or wet, a little leaf mould, placed along beside the roots in the row, will assist them to make fresh growth.

POTATOES.—Plant Shaw's and other such large early sorts.

FRUIT GARDEN.

APRICOTS and PEACHES.—Attend to the protection of the blossoms.

STANDARD FRUIT TREES.—See that the recently-planted are firmly staked, to prevent them from being injured by high winds.

FLOWER GARDEN.

ANNUALS (Tender).—Sow in pots, filled with a mixture of two-thirds light, rich loam, and one-third leaf mould. Cover the seeds very lightly, and plunge the pots into a hotbed. In watering, either do it with a very fine rose watering-pot, or with a syringe.

BEDDING PLANTS.—Continue to propagate them by all means, using artificial heat for the purpose.

CALCEOLARIAS and VERBENAS.—Pot off, and all such like plants that have stood the winter, in store pots, or boxes; and place them in a cold, close frame for a short time, after potting.

CAMPANULAS and LOBELIAS.—Increase the stock by seed, or by cuttings. They are useful as edgings to mixed beds, or for basket work, or planting in vases. Pay attention to watering, and the stopping back of weak and straggling shoots, to form dwarf, bushy plants.

EDGINGS.—Plant *Box*, *Daisy*, *Thrift*, *Camomile*, *Pansies*, *Aubretias*, *Campanula*, and *Gentiana*; they are all used for that purpose.

FUCHSIAS and PELARGONIUMS.—Look out a few, and grow them into specimen plants, for vases and other decorative purposes.

HERBACEOUS PLANTS.—All kinds may now be planted, either to fill up vacant spaces, or to make new groups in large beds, or borders, where the arrangement of heights and of colours may be so made as to display their beauty, either by harmony or by contrast.

ROSES.—Plant, shortening all long and straggling roots, and cut away any bruised or broken ones. They delight in about equal portions of stiff loamy soil and old rotten dung. Be careful not to plant them deeper than they stood before, and firmly stake and mulch them. If the heads are weak, cut each shoot back to two or three eyes. For general pruning, it is recommended that the shoots of the *Moss* and *Provence* be cut back to three or four buds; *French Hybrid*, *Damask Perpetuals*, *Hybrid Perpetuals*, and *Bourbons*, be shortened to six or eight buds from the bottom of the shoot, removing the small spray, cross branches, and spurs, that had produced bloom last season. The *Hybrid China*, *Austrian Briars*, and the *Sweet Hybrids*, are very impatient of the knife; and will, therefore, only require to be thinned out when the shoots are too thick, and merely the tips of the shoots cut off.

WILLIAM KEANE.

MODES OF HEATING—SPRING FLOWERS—AND PROPAGATION.

PROPAGATION, or preparing for it, is the great work in hand just now, in most places; but when one has to write about propagation, it seems like cooking the hare before it is caught, to do so before the plants are obtained to propagate from.

Is it not strange, that one who is not in practice could tell, thus early, which is the scarce plant we have to propagate from this spring, as compared with the number of plants we must have from it? No more strange than true, however. The plant most scarce this spring, is,

undoubtedly and unmistakeably, *Lobelia speciosa*. A thousand plants of it will be needed, towards the end of next May, for every old plant of it in the country. They are pushing it on now, in the nurseries round London, like wild-fire. One here and there has a good stock of it; but the great cry has been, since the beginning of the new year, a dread of a short supply. The old plants of it did not do so well last autumn. It was too late ere it began to make nought but "flowering wood;" and the winter has been so fresh, so mild, and so muggy, that the new growth damped off in cold pits, and the next start is weak for the first cuttings. In other cases, the demand for it last May was so great, that it was "sold out" in many of the nurseries, where they have only now a low figure of August-put-in cuttings to get their whole stocks from. The only way to make sure of a full supply of it, therefore, must be from seeds; and the seeds of *Lobelia speciosa* must be, and will be, the earliest to sow in all the March sowings. Not a day must be lost after the cutting-bed is made up, or the Cucumber, or propagation-bed. But the best bed of all, for getting up very delicate seeds, by very moderate gardeners, is the Waltonian Case.

Mr. Walton himself, and more especially Mrs. Walton, would beat Sir Joseph Paxton, and Mr. Flemming, and Mr. Somebody-else, at raising the very smallest seedlings by the "Case." But this year the garden is more than twice the size, the framing-ground four times larger than formerly, and yet Mr. Walton's gardener told me the other day, that "that case" was sufficient to raise "stock" for four gardens of that size. I also heard that Mr. West made a "wonderful improvement" on the Waltonian Case; and I expected, Suffolk-like, that I should have a drawing, or working plan of it, to come in with the portable greenhouses; but I find it is now tied in the Queen's name; so that, even I, who am its lawful godfather, cannot put a finger on it.

"You may draw Cabbage plants, and you can draw Radishes and Dutch hoes, but no more drawings of the Waltonian," is all the answer I could get; but I gleaned so much, and guessed so much more about all this, that the case has been both simplified and made stouter and stronger, and quite different, but on the same principle as the first; that some parties had bungled the thing about London; and that the new edition had been "registered," to save it from the same fate. I saw the process, from the cutting of the zinc sheet, to the lamp being ready to light; and I was promised a sight of a drawing-room one, which is painted, grained, and varnished, or polished, I forget which. But the truth is, I always so set my face against patents for garden things, that I would drive a carriage and four right through the best Patent Act: and any of my friends who chanced or risked their lives or fortunes on the "Act," would get the weight of my wheels with as good will as if they were Russians or Red Indians.

I expected also to be able, by this time, to announce another new feat in gardening—a portable gas stove to stand up seven feet above the surface of the earth, away from the landlords, and to heat by a new system of the circulation of hot water; that is, the principle of the hot-water system applied quite differently from any that has yet been suggested. But that, also, is, or is to be, registered immediately, and must stand over till we feel winter again. But I saw the apparatus in full play last November, when we had that severe cold, in a gentleman's conservatory nearly opposite the Palace of Hampton Court. Since then, however, there was no cold to signify, or to test the advantage of the new mode which was got up for a London architect, who wanted "something more simple, more cheap, and more in the drawing-room style" than he could get about London. What I recollect is, being taken down to the lower regions, across some passages, and at last came to a hot place smelling of salt and sulphur. The place was an under-

ground back kitchen, where the baking, the boiling, and the roasting were done with gas. The gasometer was in one corner, and a roaring of gas overhead in a stove-like case. This was the contrivance for heating the conservatory on the ground-floor above us. A very small jet of gas was let loose in a tube; and, at the top of the tube, it passed through a wire-net, roaring and spreading itself to six or ten times its former volume as it passed the net. The flame then played on a surface, or rather on two surfaces, just like two small saucepans inverted, and the one inside the other. The two saucepans would not hold three gallons of water; but they made the boiler, and the gas made the fire for it. An inch-pipe for a flow, and another for a return, like the two handles of the saucepans, went across through a division-wall, then up, and through the ceiling. But ere we get up stairs, let me remark, that the watcher in this lower region, was very different from those in another place, as you read in books: but whether it was from our praising everything for being so clean, clear, and tidy, so early in the day; or from her being naturally of a good temper; or from the fact of the gardener having to be there late and early, to look to his fire, it is not easy to say; but I never yet met a cook, in such a place, who was in better humour, or spoke better of these out-of-the-way things, or of "master who was so fond of gas." No trouble to cook with gas according to her tale.

The conservatory is exactly in the wrong place, begging the architect's pardon—facing the north pole, or a little to the east of it; and the harness-room of the stable, or coach-yard, which corresponds with the conservatory, on the same axis, faces the meridian of that part. Without one farthing more expense, or an inch more of space, this pile might have been the very best of its kind; and yet a first-rate architect has made it as unenjoyable as art could make it, save that for two months in the height of summer, the drawing-room, and the conservatory out of it, are just cool enough to be comfortable.

At one corner of the door, as you enter this conservatory, in come the two handles of the saucepans, from the scullery below; and all round the house a skirting-board of iron runs, which, board-like in looks, is one inch thick on the top; the bottom comes in to "nothing;" and the depth is nine inches. It is full of water, which circulates without a flow-and-ebb division. The principle is, that the hottest water keeps in the top of the wedge, or thick end, a wedge being the section of that kind of pipe; the cold water returns in the bottom, or sharp end, of the wedge. This kind of pipe gives eighteen inches of surface all round. It is made by doubling an eighteen-inch breadth of sheet iron, and riveting the edges, then plunging them into the galvanised tank, and they come out silvered and ready for use. They are in six-feet lengths, and united in a way I forget; but they then answered perfectly, and would do so all along if there were need of heat.

From the same jet of gas, and the same saucepans, an inch flow-and-return went to the front hall to heat a stack of similar flat pipes, which fitted into an ornamental cast-iron stand at the side of the grand staircase; and if more heat were needed, I believe a common batswing jet of gas, such as is used in street lamps, could be made to assume a column shape one foot in diameter, to play on the bottom of the boiler. Then it follows, that the best kind of heat for plants, and for those who like them, has been obtained at last from the use of gas, without any of its risks. Whether the plan is, or will be, cheaper than coke or coals, the frost was not good enough to prove since the invention was applied; and the scheme is registered to come out next winter, or next March, which may mean the same thing; so it is out of my beat to give any sort of drawing of it. I had no authority to say a syllable about it; but, like the Waltonian Case, and Mr. West, the manufacturer of it, when I know a plan to be thoroughly good, and people send for me to see it, I shall

not be bound to hold my pen anent it. I can only displease; and being displeased with patent laws, as they affect gardeners—the most liberal men on the face of the earth—it just comes to “chit for chat;” and I wanted something out of the common to heat uncommon-built greenhouses for moving from place to place.

The way that the gas is made to give a larger flame by this process, and the circulation of water in flat pipes without a provision for the flow and return, were both new to me, and seemed the most effectual method of employing gas that I had heard of; but the whole is to be advertised in THE COTTAGE GARDENER as soon as the frost will come strong enough to prove the quantity of gas for such and such work. The convenience of the thing, and the safety to the plants, are already beyond doubt.

Then, having the plants, and the easiest ways of keeping them, the next question is the way to propagate and increase our stocks. The half of the amateur world does not yet know that nine-tenths of our hardy spring flowers can be best and most safely propagated in the same spring. But everyone of the hardy spring bulbs—beginning with Scilla—will part and divide, just as they are seen to come up to the surface, as they would while at rest, and when it might be more difficult to do it on account of the ground being occupied by other plants; then the Hepaticas, the Polyanthus, the double Primroses, and the border Auriculas, will divide at the beginning of March as well as at any other time, and some of them much better. Some of the finer kinds of double Primrose, and the double dark Polyanthus, are not so safe to divide at any time so much as at the beginning of March. If you part them after they are out of bloom, the hot weather and the red spider will render them fit for parting no more. If you do them in the autumn, the chances of wet and dry, and of being turned out by the frost, are just as bad; but as soon as life is moving in the spring, the move will keep on the go longer than at any other period; and that is the sole reason why most of the more difficult plants to keep or to increase, are so much safer when they are done in the spring, at the beginning of the general move. February, and early in March, are as good times as any, if not the best times, for planting all kinds of spring beds for that spring's use: but in such a winter as this, the mere work of planting or transplanting might have gone on since the cold weather in November, but not the work of dividing to increase the stock.

The last part of the planting for the spring gaieties, at the Experimental Garden, was finished the first week in February—rather sooner than is usually the case; and the last day, five vases, two match pairs, and one to make up a row, were finished something after the model of my Christmas nosegay, thus—Twelve Tulips of the *Vermillion Brilliant* were removed from where they were put to root last October, and planted in each vase; the tops were about an inch out of the ground at the time. Some people might think these Tulips would do better if they were put into these vases at once in October; but October was out before the *Tom Thumbs*, then in them, were out. Although these Tulips, in such a winter as this, might have done just as well if they were put in as soon as the Geraniums were housed, do you suppose that all kinds of spring Tulips are so strong and hardy, that they would not suffer more from being cooped up on the top of a vase, during a hard winter, than from being removed, after the winter was over, from a comfortable bed on the ground, where they could be more easily tucked in under more covering, the more cold it was? There is no question about the plan at all; and, as I said before, there is no sort of reason about being in a stew and on the fidgets about getting in the bulbs in the autumn, as some people are, who do not know better. Then, after the whole of these Tulips were thus planted, the next thing was to fringe the vases; and the last thing,

to cover every spare inch of the mould with Golden Saxifrage. At the present moment, no vases can look better; and I am quite sure that none more brilliant can be found, when the *Vermillion Brilliant* is in bloom, for the fringe; and the collar of the fringe will be in bloom at the same time; and the Golden Moss, as some call the Saxifrage, will then be also at its prime. The fringe is made of fifteen plants of *Aubretia purpurea* for each vase, and between them (the Aubretias), a stand-up plant of the close-growing white Iberis, which Mr. Rivers sent us last spring. A severe critic has remarked on this combination, that if the same quantities of these colours were placed as a painter would put them, that the group could not stand criticism; but as the colours are put as they are given in nature—each on its own, and on a different green for the background—that nothing could be conceived more rich, or telling, or in character, for where they stand. The said critic knows the haunts, habitation, and doings of Chevreul,—perhaps also the very man,—as well as I know the road to Claverstow. D. BEATON.

SOME PRINCIPLES OF CULTURE.

“Will you be kind enough to make a few remarks on the proper culture of the *Daphne Indica*? I have had several, but some have died, and others look sickly. From a few remarks which I have seen in THE COTTAGE GARDENER, I inferred that when they had done flowering in the greenhouse or conservatory, they should be put in a house where there was heat to encourage them to make early buds for the next season, the same as Camellias; but I found this would not do, for it killed several, and brought the others into flower much too soon in the autumn; whereas, I wanted them to be in bloom during December, January, and February. The heat of the house where they were kept, was very moderate—a late Peach-house, with very little fire during the season, and not placed anywhere near the Peach trees. They have not been disturbed in the pots, which appear rather small than otherwise, for the size of the plants. They grow in the usual soil, loam and peat, with sand, very well drained.

“I really begin to be afraid of adopting the plan which you have recommended for these plants, and also for some others. I have lost a beautiful *Pleroma elegans*, and a *Gardenia florida*, by the same means. When they had done flowering in the conservatory, they were each cut a little, and plunged in a leaf-bed, in a late viney, the heat being very moderate. The *Gardenia* did not shoot out at all, but died by degrees. The *Pleroma* made a few shoots, with leaves large in proportion; but they soon died away, and the plant altogether. I have, therefore, made up my mind to allow such plants, after flowering, to remain in the conservatory until the spring, when they can be put into heat to bring them into flower, and then be removed into the conservatory, and so on. In nature we find, in general, but one growth for the season. Is it not, therefore, contrary to nature to force these plants into bloom in the spring, and afterwards to make them grow again to ripen their buds for the next season?”—CLERICUS.

WE are very sorry that “CLERICUS” has had such bad success in the culture of *Daphne Indica*, *Pleroma elegans*, and *Gardenia florida*, by adopting, as he says, the plans recommended in THE COTTAGE GARDENER; so that the plants of the first either died or became unhealthy, whilst fine plants of the two latter died outright. He will not, I am sure, accuse me, or any of my co-adjudicators, whose articles he may have read, of any want of courtesy, when I express a doubt whether, rather a want of it, instead of a close attention to the modes referred to, was not the cause of failure. Whether, again, such plants would be better not to be removed from the conservatory at all, will depend upon the position the plants occupy in it, and the average temperature and moisture during the twelve months enjoyed by that conservatory. One thing I am pretty certain of is, that if the whole of that conservatory is uniform, as to these conditions, it will not suit these three plants equally well. Neither do I see the force of the conclusion arrived at,

taken in connection with the course of culture resolved upon for the future. The conclusion is, "In nature we find, in general, but one growth for the season. Is it not, therefore, contrary to nature, to force these plants into bloom in the spring, and afterwards to make them grow again, to ripen their buds for the next season?" The course of culture resolved upon, is "to allow such plants after flowering to remain in the conservatory until the spring, when they can be put into heat, to bring them into flower, and then be removed into the conservatory, and so on." Now, it strikes me to be somewhat in accordance with logic, that if it is unnatural to force plants, by extra heat, to grow after flowering, it would be equally unnatural to force them into flower in the spring, or any other time.

However much may be advanced, rightly, respecting natural laws, when treating upon plant culture, there can be no question that much that is said about certain modes being in unison with, or in opposition to, nature, is just high-sounding phraseology to conceal our ignorance. I listened not long ago to a somewhat learned discussion as to the cause of an unfortunate result,—one ascribing it to what he called a clearly-manifest natural law; a second saying it was owing to a peculiar concentration of the decomposing powers of light; a third affirming it was owing to terrestrial radiation in unison with the galvanic powers; and a fourth, as certain as he was of his own existence, that it was entirely owing to electro-chemical agency.

Now, after keeping two ears open, and the mouth ready to catch what might escape the ears, I freely confess that my ignorance was quite as dense at the conclusion as at the commencement of the argument. Nay, that the idea, in a very unwelcome shape, began to traverse my brain, that my learned brethren were just about as ignorant as myself.

It would take no great investigation into our gardening literature, letting alone the conversations of the select coteries, to show how diverse are the facts and principles dame Nature is made to carry on; her beck, her authority, being pronounced as something at which objection should be thoroughly hushed, even though the good old lady should find a difficulty in discovering a trace of herself in the strange garbs in which she was arrayed. Some of the most splendid outbursts of eloquence, based on illustrations from vegetable nature, lose much of their force when it is known that the facts of the illustration, though they may be popularly current, are not really true. A medical man, who passed with high honours a botanical examination many years before, was attempting to explain what was amiss in the system of an old gardener, by an illustration from vegetable structure; when the old man, bad as he was, laughed outright at finding his good friend so floundering out of his depth: and the good doctor, with equal hilarity, confessed that he was thoroughly crammed for his examination, and had had no time to think of it since. He added: "I must mind your correction; for, unfortunately, I have used the same supposed natural illustration several times already; and thought, because it was so familiar, it would be all the more telling."

Now, successful gardening will greatly depend on our being able to assist nature—to act in unison with, and not in opposition to, natural laws. The more careful our observation, and consequently the more extended our knowledge, the more able shall we be to generalise, and form for ourselves general natural principles of action. These great general laws, however, if we would not be led astray, must not be followed to the neglect of the more particular rules, deduced from the vast variety of the tribes of vegetation, and the very different circumstances in which they are naturally found as respects climate, position, &c.; taken in connection with the difficulty—nay, the impossibility—of giving to many such plants in our climate advantages such as they possessed

in their own homes; because, though wealth may here command the heat of the tropics, it cannot command the bright unclouded sunlight of these regions.

The very artificial circumstances in which plants are thus often placed, and our desire to make the most of the flowers when we get them, render it quite natural and right to follow the courses disapproved of by our correspondent; though, were it not for the continuance of the flowers, it might seem more natural and less intricate to follow the plan in many cases which he indicates.

Thus, though it is hardly worth while to show, that in many cases there is more than one growth for the season, it is more profitable to recollect, in unison with the theory of forcing, before or after bloom, that the period of growth as contradistinguished from the period of bloom, is regulated by no general law. In many cases we have the bloom before there is a vestige of foliage; and, in that case, leaf-growth, and wood, or bulb-ripening, must succeed flowering. In other cases, we have bloom on the young wood of the current year; and in that case there must be growth before there can be bloom; and that growth again must be matured, to emit other young flowering shoots in a following year. Not to enlarge: in the three plants named by our correspondent, the flower-buds are formed at the points of last year's well-ripened shoots, that ripeness being of as much importance as mere growth. In their natural homes, these plants would bloom and grow contemporaneously; and so they would do here, if each had a house suitable to itself: for, although our correspondent has placed them together, they will not thrive under the same treatment. But then we like the flowers so well, that to keep them as long as possible, we place the plants in a lower temperature. That of itself checks growth; and, if long continued, is apt to injure the plant. It is not so good for the plant as if it were allowed to remain in the temperature in which it came into bloom, and to go on without that hindrance. The encouraging the plant after blooming is, therefore, merely attempting to make up the lee-way, and to give to it what Nature would have given if it had not been interfered with.

Besides, so liable are many plants to suffer from this check, and to meet with careless treatment when out of bloom—the bloom being all the attraction—that in very many cases, such as the Daphne, it has been proved to be the best practice to encourage the wood-making and ripening by extra attention; and then let the bloom come naturally, without any extra heat beyond a greenhouse or conservatory. The latter, in general, being from 5° to 10° higher in temperature in winter than a cool greenhouse. In such a place, Camellias and Daphnes would bloom all the winter.

However well, then, many plants would thrive when kept all the year round in such a house, it is not for such a house that precise and particular directions for plants are given, so much as for houses intended to be kept as gay as possible, by admitting flowering-plants, and removing those, or shifting them when done flowering. Of course, where conveniences do not exist, such fine things as Pleromas must find a suitable place in the one house. Camellias and Azaleas, and even Daphnes would do as well without moving as with, if they got the necessary treatment; but then no other plants could stand in the same place. Our impression is, that whether kept in the house, or taken from it, so that the plants at one time have a higher temperature and a moister atmosphere, and then at another time more air and more light than they could receive in a common house, and, perhaps, considerably darkened by creepers, the nearer the minute directions can be acted upon, the greater will be the general success; though I should not by any means even then guarantee against deaths and losses, for these will happen among plants, as well as among men, with small note of warning at times.

I will now glance at a few particulars. Having in

previous volumes given the treatment of *Daphne Indica*, so as it would bloom in winter and spring, some other friends may give their version in full. So far as I recollect, it was advised to give the extra heat only for a time, and then to harden off by degrees. It strikes me, that "CLERICUS" very likely kept his plants too far from the glass, and too long in the Peach-house. If the heat in the house were so little, I could see no advantage in taking the plants there from the greenhouse. Suppose the plants were put there at the end of March, and from April the house average 55° at night and 70° at mid-day, I would have taken the plants to the greenhouse in June, and, very likely, put them out of doors in August. These would probably show in October. The plant, being comparatively hardy, does not want this extra heat, except to encourage early blooming. Plants that have bloomed in greenhouses and in windows in April and May, and on to June, have been kept in the greenhouse until July and August, and then either placed in a sheltered sunny spot out of doors, or kept in a sunny, airy part of the greenhouse. When flowering, several young shoots would start just behind the flower-truss, which would grow on, requiring only thinning; and if these were well hardened and ripened in autumn, and rested in winter, anywhere where there was moderate light, the flower-buds would begin to come when the days lengthened in spring. As already noticed, the plant does not like much forcing to make it bloom. If great care be not taken, the flower-bud will elongate into a shoot. For winter blooming, the growth must take place earlier, the plant be ripened by plenty of sun, and just enough of water to keep it from flagging in autumn; and, then, when housed in October, the buds will commence opening in December, or earlier, in a temperature averaging from 43° to 48°.

Pleroma elegans requires great care. I have seen a plant, one mass of bloom, decay without any apparent cause, except from the collar of the plant being kept in a wet state, from the water making a hole round it. When every shoot, or twig, almost blooms, and these are cut away, a little extra heat, to encourage the smaller ones, will be of benefit. It is much tenderer than the *Daphne*. It is a native of the Organ Mountains, near Rio Janeiro. The climate is naturally moist; but anything like sodden moisture near its roots is ruin to it. From its mountain habitat it will bear a colder atmosphere than its neighbours nearer the coast. When a dry, cold air comes full upon it, though several degrees above the freezing point, the leaves will get spotted and curl, and even the wood will be injured. I should like, however, to be very sure of the mildness and sweetness of any hotbed in which I placed it. If plunged at all, the bottom of the pot should stand on bricks, with a space between them, so that there should be no chance of the drainage being interrupted. When a higher temperature is spoken of at times for it, it was understood, that, for a part of the year, it would bloom, and find a place in a cool or common greenhouse. In a conservatory, averaging from 45° to 50° in winter, it would want no moving; it would be easy to give it what it wanted there. A corner might be made closer and moister at one time, and opener and more airy than the rest of the house at another. By the same means a cold pit in the summer may be made into a hothouse for growing, or an open, airy position for ripening wood. I should not like to force the *Pleroma* when bloom was wanted: the plant would feel any check very much after it. There are a few hints on this plant at page 262. The extra abundance of bloom, and a check then and afterwards might be the cause of the death. If the plant were long plunged, the roots would be apt to have more moisture about them than the leaves could easily evaporate. The large size of the leaves produced would intimate as much. There can be no question that a suitable place in the conservatory would be far preferable to being plunged in a hotbed under the shade of Vines.

Gardenia florida, a native of China, is a much hardier

plant; and yet, when swelling its buds and making its growth, it will bear an amount of top and bottom heat, and thank you for it too, that would soon ruin the mountain *Pleroma*. Provided the wood is pretty well ripened in autumn, it will be safe in winter in a temperature of from 40° to 45°, or even a little less at times: but no more water must be given at the roots than will meet the very limited amount of perspiration from the foliage in dark weather. In a cool greenhouse there would hardly be heat enough to open its bloom until July. To bloom next season, it must have no shade in the autumn months. Blooming at all will depend on this, and the successive system of shoots: that is, the strongest and best-ripened shoots of last autumn will bloom this season; the weaker shoots, when those that have bloomed are cut out, will succeed them. In a conservatory from 5° to 10° warmer, it may be expected to bloom a month earlier. In either case it will be perceived, that the same heat that swells the flower-bud encourages the shoots to grow for next year. If every shoot should bloom, it must be manifest that, on the cool system, you would not have much bloom the following year. Most plants require a certain time to grow, to mature, to rest, and then to bloom, fruit, &c. If this, or any plant, is forced early for the sake of the flowers, and for this purpose, because they seem to like it, we give them more favourable conditions in spring than they could obtain in a greenhouse or conservatory at mid-summer. It ought to be clearly understood, that when, for prolonging the pleasure that the flowers give, we transfer them to an atmosphere some 15° or 20° lower than the plants opened their bloom in, or which the plants would naturally have had in the months of July and August, in a conservatory, that just so far we give a check to the system of growth; and if we want such a plant to flower equally well and early next season, and to come in, as it were, more naturally, we must try and give a fillip to the growing powers, so that there may be time enough for maturing and resting before again exciting into bloom and growth. Treat such a forced plant as we would do a Vine, or a Peach tree, that we force more for fruit than flowers, and the difficulty of "CLERICUS" would at once be removed. The same stimulus that swelled the flower-bud, would also swell the wood-bud, or elongate the shoot. The swelling of the fruit would be accompanied with the growing of the wood. When the fruit ripened, and was cut, we should think more of the maturing of the wood, than of its mere elongation. The same *natural* principle must be carried out with plants that we grow merely for their bloom, though we may modify them to suit particular purposes. In this case, if the plants were put into the hotbed in the spring months, I should say the hotbed, if all right, was less guilty of the result, than the check the plants had previously received. If placed in that bed in the autumn, the plant required then a ripening, rather than a growing process, under Vines.

I do not know how it is now, but twenty years ago vast quantities of this *G. florida* and *radicans* were sold by nurserymen in the spring and early summer months, not only in the neighbourhood of London, but, some ten years ago, also in country towns; being brought and hawked in covered vans and carts. I have come across scores in April and May, in windows and cool greenhouses, not one half of which would ever bear another bloom. The continued check paralysed the plant to its core. Very likely these plants came from an atmospheric temperature of 70°, and a sweet, moist bottom heat of 85° to 90°. They stood exposed in a temperature at night averaging from 45° to 50°. The system was so good for trade, that at one time nurserymen could not get too many of these sweet-scented plants. Many nice things sent out from nurseries are irreparably injured from the same cause. Their business is to grow and sell as quickly as possible. It is the purchaser's business to look after the preserving part of the affair. It may be

worth the trouble of growers to inquire whether failures are not oftener owing to the neglect of such minutiae, than the following of directions which they have come to suppose to be contrary to nature, but which in reality are not so.

R. FISH.

VARIEGATED STOVE PLANTS.

(Continued from page 265.)

IN the following notices of these charming plants, I follow no particular arrangement, not even the commodious one of alphabetical order. My aim is to describe such as I have seen and taken notes of, as being particularly handsome in the markings on the foliage, and, consequently, most worthy of culture.

CYANOPHYLLUM MAGNIFICUM (Magnificent Cyano-phyllum).—This truly beautiful stove shrub is a native of tropical America, where it was found by Mr. Linden's traveller, and transmitted to Europe in 1857. The leaves are rich in colour, and of a fine form. The upper surface is of a rich velvety green, with conspicuous ivory white nerves and veins. One strong nerve runs up the centre, and a pair equally strong run up near the margin and meet near the apex. The leaves are of a long oval shape, terminating in a point. In full-grown specimens, the leaves reach two feet in length, and seven or eight inches broad. The underside of the leaves is of a peculiar colour, a kind of coppery, bronzy-purple. The plant has a tendency to grow with a straight, branchless stem; hence it is necessary to nip off the top, at an early stage, to cause it to produce side shoots. The compost it delights in, is formed of fresh loam, peat, and leaf mould, with sand intermixed. It may be increased by cuttings taken from the stem, by leaves with a bud at the base, and by cuttings of the stronger roots; all to be planted in silver sand, under a hand-light, either in a warm tan-bed, or on a heated surface of sand kept moist.

MARANTA REGALIS (Royal Maranta).—The authorities of Kew Gardens have had the honour of introducing this finely-marked plant from Columbia in 1854.

It has leaves a foot long and four inches broad; the underside is of a bright reddish-purple hue; the upper surface is bright green, with a pair of metallic crimson veins running from the midrib nearly to the margin. The leaves in the early stage of growth are exceedingly beautiful; when old, these veins become nearly white.

This plant is easy to grow, requiring the constant heat of the stove. If there is the convenience of a bark-bed, and the plant is plunged in it, the growth and beauty will be very superior to such as are grown on a stage. It is easily propagated by side-shoots taken off with roots, and planted in small pots, and set under a hand-glass, and shaded till fresh growth is caused. A light compost of sandy peat and leaf mould, with a small addition of turfy loam, will grow it well.

CROTON VARIEGATUM (Variegated Croton).—Though this is a very old inhabitant of our stoves, yet, as a variegated plant, there are none that surpass it when properly cultivated. It was introduced from the East Indies in 1804.

I lately saw, in Mr. Coles' nursery, near Manchester, a decided variety with longer leaves, and of a pale green colour. Excepting for variety, I prefer the older one. It appears, however, to be of a more robust habit.

The grand secret of obtaining the bright colours—golden yellow and lively dark green—is that of giving the plant full exposure to every sunbeam, even in the hottest days in summer. Under the care of Mr. Hamblin, gardener to W. Smith, Esq., of Roundhay, near Leeds, I saw, last summer, a Variegated Croton, six feet high and four feet through, a dense bush covered with the richest-coloured foliage I ever saw, and he ascribed it entirely to the effect of full sun light. It was, indeed, a truly beautiful object. He made it into a bush by frequent

stoppings and underpotting. It propagates readily by short cuttings, planted in sand under a bell-glass plunged in heat. The usual compost of fibry loam, sandy peat, and leaf mould, suits this plant admirably.

BEGONIA REX (Kingly Begonia).—This may be considered the handsomest of all the Begonias, and certainly the most easy to propagate and grow afterwards. The horticultural world is indebted to the Messrs. Rollisons for its introduction to this country. As a proof of its easy increase, in the beginning of 1858 it was sold at 42s. per plant, and may be had now for 3s. 6d. per plant.

The leaves are of the usual form of the genus; that is, an oblique oval, inclined to heart-shape. The ground-colour is of the darkest green; and on it, about midway from the centre to the margin, there is a broad band of pure white, giving the plant a rich unique appearance. It keeps its foliage all the year, and is, therefore, always a great ornament.

As it is a rapid grower, it requires frequent potting from a small pot to a large one. A plant of three small leaves may be grown in one year to the extraordinary size of two feet diameter, and leaves proportionably large; and the quicker it is grown the more vivid will be the markings on the foliage. It may be propagated by cuttings of young shoots, and also by small portions of the leaves; or a large leaf may be laid on sand and divided into many pieces, and placed under a bell-glass, and each division will send out roots, and form buds, which quickly put forth small leaves, and so make plants. Being such a gross feeder, the compost for it should be light and rich. Loam, peat, and well-decomposed dung in equal parts, made very sandy, are the right compost for it. Every owner of a stove, however small, should procure a plant of this very fine Begonia.

PANDANUS JAVANICUS VARIEGATUS (Javanese variegated Screw Pine).—A fast-growing Pine-Apple-like plant, with long-arched leaves; the ground-colour of which is dark green, with long stripes of silvery white, both in the centre of the leaf and on the margin. A well-grown plant is a truly fine object.

Soil strong loam, leaf mould, and sandy peat, in equal parts. Propagated by suckers and side-shoots, potted and plunged in a bark-bed, and shaded till rooted.

MARANTA WARSCEWICZII (Warscewicz's Maranta).—This is a large-growing, robust, evergreen, herbaceous stove plant, with large, dark green, velvety foliage, shaded and feathered up the midrib of each leaf. A hardy, robust plant of great beauty, worthy of a place in every stove where there is room for it. Easily propagated by taking off a side-sucker with roots, and placing it for a week or two under a hand-light, until fresh roots are emitted.

This plant loves a rich, light soil, and abundance of water when growing freely in summer. T. APPLEBY.

(To be continued.)

THE LONDON HORTICULTURAL SOCIETY.

MR. ARCHIBALD HENDERSON has exercised prudent foresight in resigning the situation of gardener to the HORTICULTURAL SOCIETY, and accepting the offer of a similar appointment to His Grace the Duke of Sutherland, at Trentham. We feel quite certain that Mr. Henderson has taken a course which is very much more for his own interest, and infinitely more creditable to a good gardener, than to continue in a place where merit is not appreciated, and genius has no encouragement. During the period Mr. Henderson was at Chiswick, he managed the gardens in the best possible manner; and never, during the whole time we have known them, do we ever remember seeing them in such high keeping. During the whole of the winter months they were always neat and cheerful; while the arboretum, especially, was a perfect paradise. We say Mr. Henderson has exhibited prudent foresight in the step he has taken; for, no sooner is his advancement made known, than the Council of the HORTICULTURAL SOCIETY issue "An Address to the Fellows," stating that it is

their ultimate intention to relinquish the garden at Chiswick. Mr. Henderson, doubtless, saw the Council took no interest in the garden, and were doing all they could to get rid of it; and, therefore, he did what every other sensible man would do.

The Address of the Council is a most doleful one from beginning to end. It contains but three paragraphs; in two of which they drop their chin, and in the third they try to smile in prospect of three meetings, which, if as successful as the preceding ones in town, will be pecuniarily a certain loss. The first paragraph states, that "Notwithstanding the liberal manner in which a considerable subscription was made by a number of the Fellows, and the expenditure of other large sums in maintaining and adorning the garden at Chiswick, it remains almost unvisited by the Fellows; and the public will not go so far even on the days of exhibition." In consequence of this, they have determined to relinquish Chiswick Garden in favour of another, in a "situation more advantageous to the Society." (The italics are our own).

To those of the Fellows and the public who do not know better, it, doubtless, will appear strange that the Council should take this bold step without consulting the Fellows of the Society, and without receiving from them any representation that they wished the garden done away with. It is, certainly, a great disappointment to the Fellows to go there year after year, and see nothing going on for the advancement of Horticulture. They have borne patiently with this, from the belief that a change for the better was to be ushered in by the new Council; and they are forbearing still, in hopes that something will be done in that way; but they have never complained of the existence of the garden, or regarded it as a burden on the Society. We, therefore, think that the majority (for they are far from unanimous) of the Council are taking on themselves that which they are neither asked for, nor warranted in doing.

It is all nonsense to talk about the advantage of the Society: and we trust the Fellows of the Society will never allow dust to be thrown in their eyes by any such specious representations. If the Society retain the grounds at Chiswick as an experimental garden, and will have another garden at Kensington Gore for exhibition purposes, that will be a move in the right direction.

We sound the note of warning in time. Great efforts will be made by the parties concerned to attain their end; every move that is taken, and every representation that is made, will all be towards that one object; and, therefore, we call upon the members of the Society to be alive to them all, and to regard every step taken by the Council with suspicion.

NOTES ON NEW OR RARE PLANTS.

DRYAS DRUMMONDI, Rich. Nat. ord., *Rosaceæ*. Native of the Rocky Mountains, North America.—A hardy perennial, of procumbent habit. Stems and branches woody. Leaves oval or obovate, crenate, dark green on the upper surface, covered below with pure white down. Petioles short, stipulate, downy, tinged with red. Stipules subulate. Scape terminal, one-flowered, downy, with single awl-shaped bract near the middle. Calyx deeply divided into seven or nine acutely ovate, membranaceous segments, clothed on the back with purple, viscid hairs. Petals equal in number, and alternating with the calyx divisions; broadly elliptical, with a short claw, bright yellow. Stamens numerous, with long hairy filaments. Styles also hairy, persistent, and becoming elongated in fruit.

A very beautiful alpine plant, but also rare; being, indeed, seldom seen in this country beyond botanical establishments. It is well suited for shady parts of rockery; and flowers more profusely, and longer in duration, in such a situation, than in pots, or in a more exposed position. The compost it prefers is light, sandy loam about one part, with two parts of peat or leaf mould. In pots it must be thoroughly drained, and protected from the autumn rains. The long feathery styles adhering to the ripe seeds give an interesting and a graceful appearance to the heads of fruit.

STROBLANTHUS SABINIANA, Wall. Nat. ord., *Acanthaceæ*. Native of Nepal. Habit lax, with somewhat shrubby stems. Branches elongating, obscurely quadrangular, swelled immediately above the joints. Leaves ovate, lanceolate, much attenuated at both ends; margin dentate, serrate; mid-rib and veins prominent, smooth, and glaucous above, beneath tinged with purple. Inflorescence spicate, with close imbricated bracts. Peduncle acutely four-angled, closely covered with short, viscid hairs.

Calyx of five linear, lanceolate, unequal lobes. Tube of the corolla much curved, suddenly dilating from the mouth of the calyx towards the limb, of five spreading, equal, rounded, purplish-lilac lobes, streaked with veins of a lighter tint.

An excellent winter-flowering stove plant, beginning to bloom about the earliest part of December, and lasting till the latter end of February. The individual flowers are very fugaceous; but are produced in rich succession. Good fibrous loam, with a third part of leaf mould and sand, is the best compost for it. During the growing period it should be unsparingly pinched back to encourage branching; as, if treated otherwise, it will run away into long, undivided branches, which are very barren of flowers. Cuttings root readily any time during summer.

BRITISH POMOLOGICAL SOCIETY.

An ordinary Meeting of this Society was held on the 3rd ult., ROBERT HOGG, Esq., Vice-President, in the chair. The following gentlemen were elected ordinary members:—HENRY WRIGHT, Esq., Willow Grange, Twickenham; JAMES GUNTON CHILLINGWORTH, Esq., Staines; Rev. GEORGE WEARE BAIKENRIDGE, Christ's Church, Clevedon, Bristol; Mr. GEORGE COOPER, Palace Gardens, Armagh, Ireland; Mr. GEORGE SWINERD, Minster Abbey, Ramsgate; Mr. JOHN COX, Redleaf, Penshurst, Kent.

Mr. Davidson, the Secretary, gave notice, that his business engagements deprived him of the power of giving to the service of the Society so much time as its everyday-increasing numbers and importance required; and that he, therefore, desired to resign his office of Secretary. He expressed himself willing to hold office until the next Annual Meeting, when the Society could, according to the rules, appoint a successor; but offering, at the same time, to leave it to the Meeting, whether his services should be retained until that time, or otherwise.

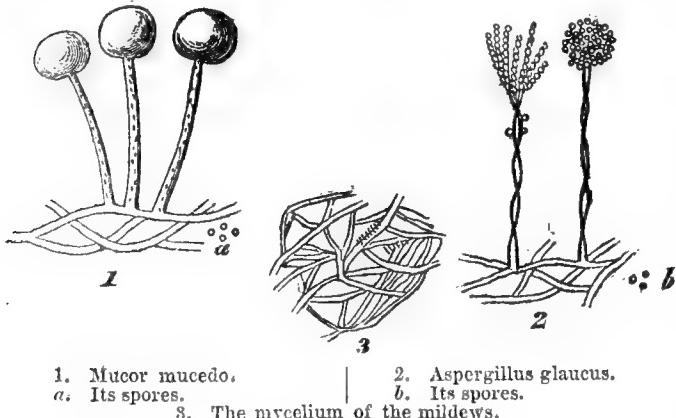
On its being moved, "That the Secretary's resignation be accepted from the present Meeting," an amendment was proposed, "That the Secretary's resignation be accepted from the end of the present financial year." The amendment being put to the vote, it was carried by a majority of 10 to 3; and the original motion being lost, the Secretary was informed that his resignation would be accepted at the end of the financial year, until which time he was requested to continue his services.

The Secretary reported, that he had forwarded to J. G. GRAHAM, Esq., F.L.S., of Cranford, some examples of diseased Apples, which he had received from Mr. SWINERD, gardener to John Swinford, Esq., of Minster Abbey, Isle of Thanet, Kent; as they exactly resembled in appearance many specimens which had, during the past autumn, come before the Society, and he considered it desirable that they should be scientifically examined. Apples diseased in the manner referred to, had generally been found, on tasting, to be much softer in texture, and less sugary than sound fruit; and the largest fruits of any given kind generally seemed most affected. The Secretary further reported, that Mr. Graham had kindly given the matter his attention, watching the disease microscopically during its progress; and, after its issue, had forwarded an account of his observations. The communication being read, the thanks of the Society were voted to Mr. Graham, for this attention, and his valuable paper; which was ordered to be printed (as follows), in the report of the Meeting:—

"On my first examination of the Apples you sent me, from Mr. Swinerd, consisting of *Margil*, *Summer Nonpareil*, *Winter Nonpareil*, *Spanish Pearmain*, *Byson Wood*, and *Golden Drop*—all affected in the same manner with indented discoloured spots—I was of opinion that the injury was caused by the presence of the mycelium of some mildew, which was not fully developed, and the rind of the fruit in too sound and tough a state to admit the fructifying stems of the mildew to penetrate through it. In order to ascertain this point, I adopted the same method which I applied when I first observed Tomatoes

to be spotted, like diseased Potatoes—viz., to thrust my finger-nail through the skin, and thus allow the mildew, if it were there, to come out. As I anticipated, in twenty-four hours the same species as that which was destroying the Potato (*Botrytis infestans*), was visible on that part of the Tomato in full fructification.

"With regard to the Apples, the process was slower; and, as they were very dry, no mildew appeared until I put them in a damp place, soon after which, two species sprung up—viz., *Mucor mucedo*, and *Aspergillus glaucus*, both very common moulds, of which I give you figures.

1. *Mucor mucedo.*

a. Its spores.

3. The mycelium of the mildews.

2. *Aspergillus glaucus.*

b. Its spores.

The first is of a gelatinous colour; the latter is at first white then grey, and lastly, dirty green. I ought also to state, that when I first received the Apples, I carefully examined the tissue beneath the spots, under the microscope, and found the *mycelium* of the mildew traversing the cells in all directions; and, as is usual in all such cases, the parts thus infested had become brown, being in fact killed by it; some suppose by feeding on and exhausting their proper juices. I am also of opinion, that the threads of these mildews are very short-lived, and, dying amongst the cells, communicate decay to them.

"I should also mention, that at the time I made the incision in the spots, I also picked out small portions of the Apples where there were no spots; and on these parts no mildew whatever has appeared up to the present time. I can, therefore, but draw the conclusion, that the spots are caused by the mycelium, or spawn, of the mildew above mentioned.

"It may, however, be objected, that as these mildews are not developed until decay sets in they may not be the primary cause of the disease, but an aftergrowth upon diseased tissue; but a careful investigation of the habits of these minute plants, will afford the most convincing evidence of their mycelium establishing itself upon various matrices while in, at least, an apparently healthy condition, and in a great measure reducing them to a state of decomposition long before the perfect plants bearing the reproductive spores make their appearance. These two mildews are found on some animal, and most vegetable substances, which contain either gum, sugar, starch, gluten, &c. The *Aspergillus* is the well-known cheese mould, the glory of Stilton; pleasant, but, I believe, not wholesome, having a tendency to produce tightness on the chest. The gelatinous mass called the 'vinegar fungus,' has been also described by high authorities, as the mycelium of this mould; but most erroneously. This mass is, in fact, only the matrix (as an Apple or piece of cheese might be), on which the true mycelium creeps in fine threads, from which, in due time, the perfect plants arise in a dense tuft of upright stems, surmounted by heads formed of chains of spores, sometimes in the shape of a broom, at others quite round, as shown in the figure above."

Of the fruit in some of the collections exhibited, in competition for the premiums, and in which *quality* was desired as well as *distinctness of kind*, many of the dishes

were so much below mediocrity, that it became a question if the general merit of the collections sufficiently warranted the award of the premiums. With regard, therefore, to all future exhibitions of fruits for premiums; excepting those cases in which collections are desired, regardless of quality, for the purposes of *comparison* and *classification*; it was resolved:—"That in all future competitions, when *quality* is the point intended to be rewarded, the premiums will be withheld, if one-third of the fruit be considered of decidedly inferior merit."

Two guineas and one guinea, for the best and second-best collections of six varieties of Late Dessert Pears. Open to growers only.

Three collections were exhibited in this class.—**JOSIAH MOORMAN**, Esq., sent from his garden at Bexhill, Sussex, situate half a mile from the sea, much exposed to south-west gales; soil, light loam, three feet deep, over undrained clay; the following kinds from healthy young trees, on pear stocks, growing against a south-west wall:—**WINTER NELIS**, large and well grown, very juicy and melting, sweet and generally excellent in flavour;—**KNIGHT'S MONARCH**, juicy, melting, rich, and aromatic, but somewhat depreciated by too early gathering;—and **OLD COLMAR**, very sugary, promising to be delicious, but scarcely ripe. Also, from his garden in Portland Place, Clapham Road; ground, flat and sheltered; soil, strong rich mould, over undrained gravel, the following kinds:—**JEAN DE WITTE**, from a south-west wall; large for the kind, and in excellent condition, very juicy, melting, sweet, and fine-flavoured;—**BEURRÉ D'AREMBERG**, from an espalier; melting, but small and bitter in flavour; and **NE PLUS MEURIS**, from espalier. Melting, but only moderately juicy, and not high-flavoured. *The first premium was awarded to this collection.*

Mr. JOHN COX (gardener to Wm. Wells, Esq.), Redleaf, Penshurst, Kent, sent a collection from a garden exposed to south-west; climate, damp; soil twenty inches of rich garden mould, over yellow-marly clay containing veins of fine ferruginous sand, damp, but drained. The fruit of all the kinds were large, healthy, and good in appearance and colour; in other respects they were as follows:—**WINTER NELIS**, from south wall, juicy, melting, and excellent;—**EASTER BEURRÉ**, from south wall, half melting, but mealy;—**CHAUMONTEL**, from west wall, over-ripe and bitter.—**PASSE COLMAR**, from south wall; juicy, but thin and watery in flavour, deficient in sugar; scarcely ripe;—**OLD COLMAR**, from west wall; past appeared to have been good and melting, but not juicy;—**VICAR OF WINKFIELD** under the name of *Léon le Clerc*, from a standard; juicy, but not at all melting, though over-ripe. This collection excited the discussion mentioned above. Though not fine in quality, they were allowed the benefit of the existing regulations, and were awarded the second premium.

Mr. WIGHTON (gardener to Lord Stafford), Cossey Hall, Norfolk, sent a collection containing **KNIGHT'S MONARCH**, from wall and espalier, very juicy and rich-flavoured, but shrivelled from having been gathered prematurely;—**WINTER CRASSANE**, not juicy;—**EASTER BEURRÉ**, large, but flavourless;—**BEURRÉ RANCE**, unripe, but sweet and promising;—**SUSETTE DE BAVAY**, half-melting, but harsh in flavour;—also, a variety called **WINTER BERGAMOT**, small and juicy, but of no particular merit; reported to be common amongst market-gardeners, but not recognised by the members present;—and a variety without name, which had every appearance of being *Swan's Egg*, although so much out of season.

Of other Pears sent for examination, the following were the most interesting:—

BEURRÉ RANCE, by **HENRY WEBB**, Esq., Reigate, from a standard, on loamy soil, over fullers' earth. Fruit medium-sized for the variety, melting, juicy, very sweet, and high-flavoured.

EASTER BEURRÉ, by **MR. JOHN BROWN**, gardener at Bentworth Rectory, Alton, Hants, from a south-east wall;

soil, strong loam, over tenacious clay. The fruit was very fine in appearance, half-melting but not high-flavoured. Mr. Brown attributed this to his not having thinned the fruit to the same extent as he had usually done,—mentioning that, in the previous season, they were very excellent, and lasted in use from the end of December to the first week in May.

JOSEPHINE DE MALINES, by Mr. THOMAS RIVERS, from a pyramid on quince stock. Medium-sized, very juicy, melting, rich, delicious, and aromatic.

(To be continued.)

CALCEOLARIA CULTURE.

AT my present place, a portion of my success may be owing to the garden being on the edge of Ashton Moss, whence I have plenty of bog earth and moisture. The kinds I grow are—*Kentish Hero*, *Kayii*, *Sultan*, *Black Diamond*, *Sulphurea splendens*, and *Auræa floribunda*.

I strike the cuttings, or rather put in cuttings, in October. I prick them in clean, sharp sand, placed in waterproof pans, which are afterwards kept in a cool house, and never allow them to become dry. I give them air at every opportunity.

About the middle of January I pot them in thirty-six-sized pots, having found they never do well when put in less sizes.

The compost I use for them is leaf mould one part, rotten turf one part, cowdung picked from a field one part, and one part good sharp sand.

I cannot say I plant out thousands, but about thirty dozen are our planting stock. I do not remember having lost more than two or three during last season.

The beds for them are composed of about equal parts bog, turf, and sand. I quite agree with Mr. Simmons, of Barnet, that bad planting, indifferent treatment, and want of water, are sure roads to ruin the Calceolaria.

I am well off here: I have pipes laid in the ground, and unions, to which I can put an upright pipe with a fine rose, which sends water a dozen yards, in a circle, as fine as rain. I can let it play for hours, having plenty of water.

The following plan will eradicate the green fly from Calceolarias:—Deluge them with guano water. I find they will stand it nearly any strength. This is far before fumigating. Bloom is plentiful with me when they can have good compost, with enough moisture and room.—JOHN HAGUE, Ashton-under-Lyne.

BEE'S SECRETING WAX.

I SHOULD have been quite content to allow the discussion between Mr. Wighton and myself to rest where it is, were it not for the misconception he appears to labour under, regarding the instance related by me, of bees secreting wax in winter. I am aware that bees will readily repair "slight damages" to their comb, by remoulding the old wax; and I perfectly agree with Mr. Wighton, that the "mended parts of the comb vary in colour according to the materials;" but I would repeat, that in the case to which I have referred, "a number of new pieces of comb had been constructed" with new wax, and as perfectly white as if just made by a recent swarm. It cannot, therefore, be explained away in the manner suggested by him.

Mr. Wighton is also right in stating that all I have adduced tends to show that "honey (or sugar) is only the food of bees, which enables them to secrete wax," and, in these words, correctly interprets my opinion.

Without any desire to multiply authorities (which might easily be done, as all with whom I am acquainted arrive at the same conclusion), I may mention that the illustrious Liebig declares that he is "acquainted with no more beautiful or convincing proof of the formation of fatty matter from sugar, than the . . . manufacture of wax by the bee."

What is stated respecting bees ejecting "wax from their mouths like small frothen crumbs," coincides in a remarkable manner with the description of Huber (or of his talented assistant, Francis Burvens), except that the latter asserts that wax is first supplied to the mouth in the shape of laminae from the wax pockets. I trust Mr. Wighton will excuse my being disposed to accept Huber's statement as being much more in

accordance with facts, so far as I have been able to observe them, than his own.

But, supposing it possible that Mr. Wighton may be right in this respect (which, however, I cannot for one moment admit), it does not follow that what comes "through the mouth cannot be a secretion;" and this statement admits of a familiar illustration. It is not to be imagined that any of the readers of THE COTTAGE GARDENER indulge in the practice of expectoration; but most of them must be aware, that on the Continent, and amongst our Transatlantic brethren, it is not unusual to see saliva "ejected from the mouth;" and the fact that saliva is a secretion is as indisputable, as I have, until recently, considered the secretion of wax by bees to be undoubted.

Bees may be in the habit of scraping the leaves and young shoots of the Laurel; and, in this case, I am of opinion with "B. and W.," that propolis would most probably be the result of their labours. All I can say is, that I have never seen them "scraping," but have observed them, in hundreds of instances, "licking" from the backs of the young leaves the sweet exudation before alluded to.

From what Mr. Wighton has stated respecting his disposition to correct or modify some statements contained in his work on bees, I am not without hope that he may have some idea of favouring the world with a new edition, in which case, he may reckon amongst his earliest readers — A DEVONSHIRE BEE-KEEPER.

FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 314.)

FIGS.

Peronne. See Brunswick.

Petite Aubique. See Bordeaux.

Précoce Noire. See Black Bourjassotte.

PREGUSSATA.—Small, round, compressed at the ends. Skin purplish brown in the shade; dark brown, covered with pale spots, next the sun. Flesh deep red, rich, and luscious. August to October. Well adapted for forcing.

Purple. See Brown Turkey.

RABY CASTLE.—A variety closely resembling Marseilles, but distinguished from it by having a longer stalk. Red. See Brunswick.

Ronde Noire. See Black Ischia.

Rose. See Brunswick.

Rose Beyronne. See Brunswick.

Rose Blanche. See Brunswick.

SAVANTINE (*Cordellière*).—Fruit round, marked along its length with prominent nerves. Skin pale yellow. Flesh pale red.

Singleton. See White Ischia.

Small Blue. See Brown Turkey.

Small Brown. See Malta.

Small Early White. See Early White.

Small White. See Early White.

Violette. See Bordeaux.

Violette de Bordeaux. See Bordeaux.

VIOLETTE GROSSE (*Aubique*).—Large, oblong, and perhaps the longest-shaped of any of the figs; its length being three times its diameter. Skin deep violet. Flesh red.

Violette Longue. See Bordeaux.

Walton. See Brown Turkey.

WHITE BOURJASSOTTE (*Bourjassotte Blanche*).—This is extensively cultivated about Marseilles. The fruit is turbinate. Skin yellowish white. Flesh red. The tree attains a large size.

WHITE ISCHIA (*Green Ischia*; *Nerii*; *Singleton*; *Brocket Hall*).—Small and turbinate. Skin pale greenish-yellow, very thin, so much so, that when fully ripe, the flesh, which is purple, shines through and gives the fruit a brownish tinge. Rich, highly flavoured, and luscious. End of August. The tree is of small habit of growth, a

great bearer, well adapted for pot-culture, and forces well.

White Naples. See *Marseilles*.

White Standard. See *Marseilles*.

YELLOW ISCHIA (*Cypris*).—Large, turbinate. Skin yellow. Flesh dark red, tender and very juicy, with a rich and sugary flavour. September.

LIST OF SELECT FIGS.

I. FOR STANDARDS.

Black Ischia	Brown Ischia	Brown Turkey
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II. FOR WALLS.

Black Genoa	Brown Turkey
Black Ischia	Brunswick
Brown Ischia	Marseilles

III. FOR FORCING, OR POT-CULTURE.

Angélique	White Ischia
Black Ischia	Early Violet
Brown Ischia	Marseilles
Brown Turkey	Pregussata

GOOSEBERRIES.

SYNOPSIS OF GOOSEBERRIES.

I. SKIN RED.

§ Round or Roundish.

A. Skin smooth.

Prince Regent (Boardman's)	Ironmonger
Small Red Globe	Lancashire Lad (Hartshorn's)

B. Skin downy.

Miss Bold	Raspberry
Scotch Nutmeg	Rifleman (Leigh's)

C. Skin hairy.

Hairy Red (Barton's)	Rough Red
Irish Plum	Scotch Nutmeg

§§ Oblong, oval, or obovate.

A. Skin smooth.

Emperor Napoléon (Rival's)	Atlas (Brundrett's)
Old England (Rider's)	Beauty of England (Hamlet's)
Red Turkey	Crown Bob (Melling's)
Ringleader (Johnson's)	Early Black
Roaring Lion (Farrow's)	Early Rough Red
Sportsman (Chadwick's)	Keens' Seedling
Wilmot's Early Red	Over-All (Bratherton's)

B. Skin downy.

Farmer's Glory (Berry's)	Pastime (Bratherton's)
Magistrate (Diggle's)	Red Champagne
Red Walnut	Red Mogul

II. SKIN YELLOW.

§ Round or Roundish.

A. Skin smooth.

Amber	Rockwood (Prephet's)
Yellow Ball	Sulphur

B. Skin downy.

Golden Drop	Yellow Champagne
Rumbullion	Yellow Warrington

§§ Oblong, oval, or obovate.

A. Skin smooth.

Duckwing (Buerdill's)	Invincible (Heywood's)
Lord Combermere (Forester's)	Prince of Orange (Bell's)

B. Skin downy.

Smiling Beauty (Beaumont's)	c. Skin hairy.
Victory (Mather's)	Conquering Hero (Catlow's)
Viper (Gorton's)	Early Sulphur

B. Skin downy.

Husbandman (Foster's)	Golden Fleece (Part's)
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C. Skin hairy.

Golden Gourd (Hill's)	Golden Gourd (Hill's)
Yellowsmith	Yellowsmith

III. SKIN GREEN.

§ Round or Roundish.

A. Skin smooth.

Glory of Kingston	Joke (Hodkinson's)
Green Gage (Horsefield's)	Perfection (Gregory's)

B. Skin downy.

Green Willow	c. Skin hairy.
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Green Gascoigne	
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Green Rumbullion	
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Hebburn Prolific	
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§§ Oblong, oval, or obovate.

A. Skin smooth.

Favourite (Bates')	Jolly Angler (Collier's)
Glory of Ratcliff (Allen's)	Laurel (Parkinson's)

Green Gage (Pitmaston)	Profit (Prophet's)
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Green Walnut	c. Skin hairy.
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Heart of Oak (Massey's)	Glenston Green
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Independent (Briggs')	Wistaston Hero (Bratherton's)
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IV. SKIN WHITE.

§ Round or Roundish.

A. Skin smooth.

Crystal	Hedgehog
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White Rasp	Royal White
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B. Skin downy.

Early White	Snowball (Adams')
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c. Skin hairy.

White Lily	
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White Lion (Cleworth's)	
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Whitesmith (Woodward's)	
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c. Skin hairy.

Abraham Newland	
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Bonny Lass (Capper's)	
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Bright Venus (Taylor's)	
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Governess (Bratherton's)	
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Lady of the Manor (Hopley's)	
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Princess Royal	
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Wellington's Glory	White Champagne
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(To be continued.)

QUERIES AND ANSWERS.

CYCLAMENS.

"I see in THE COTTAGE GARDENER of January 11th, you have been writing about the Cyclamen tribe. I have been growing many sorts of them for more than fifty years. But as this (February 1st) is my birthday, I thought I would say something about them, though my days are gone by for doing much. I am this day eighty-one, being born in 1778.

"*Cyclamen Coum* I had forty years back of a friend, and have grown thousands of them. They seed very freely, and come up like Buttercups. In our place (Kingsbridge, Devon), they begin to flower from the end of November until the end of February, or the beginning of March, and then the *Cyclamen vernum* begins to flower. The flower is smaller, the stalks shorter, and the leaves smaller than those of *Coum*, with spots on the top of the leaves. The *Coum* has no spots, but is of dark green.

"*Cyclamen Europaeum* I had fifty years ago. It is quite hardy, and seeds well. I had a sort given me for the *hederifolium*, but I am sure it is not the Ivy-leaved of Parkinson. I wish I could get the true one. I would give a dozen *Coums* for one of *Europaeum*.

"The others that I have are—*Persicum*, some sweet, some not sweet, variegated; from seed, some with pink, &c.; *Persicum rubrum*, *repandum*, *vernun*, and *Hungaricum*, very sweet. The last four I got from Mr. Groom. They all flower with me very well; but I give so many to the nurserymen, and others, that I get short of some sorts. I have some *Europaeums* that have been planted out, and have remained in the same place among the shrubs forty years, and flower well.

"This place is small. The garden and grounds between six and seven acres, but the estate and plantations are more than 300

acres. It belongs to Sir Lydstone Newman, Bart. We are about half a mile from the sea of Start Bay, and five miles from Kingsbridge. A good climate and fine soil."—JOHN MITCHELL.

[Your account of yourself, your Cyclamens, and your situation, is, indeed, most interesting. There seem to be three stages in the history of Cyclamens. In the first stage, our present *Cyclamen Europaeum* was named *hederafolium*. The next stage brings a rule-of-thumb Ivy-leaved Cyclamen from the old gardeners. This making the second *hederafolium*; and the third and last stage brings on a revision by Tenore, an Italian botanist, who knows them well, and his names are now acknowledged as the right ones. As there were three distinct kinds, or species, which had the leaves more or less in the way of Ivy leaves, and as two of the kinds went, promiscuously, by the name *hederafolium*, these two were renamed, or rather the older *hederafolium*, was restored, and the rule-of-thumb *hederafolium* of the gardeners was named *Neapolitanum*. The way to make out the difference is this:—The Ivy-leaved Cyclamen which blooms in the spring, is the true *hederafolium*; and the *hederafolium* which blooms in the autumn is *Neapolitanum*, which Tenore named after his own place, as a patriot should do. But *Cyclamen Neapolitanum* is also a native of England, and also of Sicily, and the opposite shore of Africa; but grows nowhere so well as in central Italy; and Italy seems to be the cradle of the European kinds; and as they branch off eastward and northward, they assume slight differences, which so far deceived botanists, as to lead them to give the kinds distinct specific names, as *repandum*, in the "Flora Graeca," for the true *hederafolium* of Clusius, as it was so much smaller from the mountains of Greece, than on the lower ranges of southern Italy. The confusion of plants, also, was a stumbling block, as is instanced in *Cyclamen Clusii*, which is the same as *Europaeum*.

Then, as to *Cyclamen vernum*, I could find no home for it in all the earth. No one, that I could find, said where it grows wild, to be depended on. Then, who can tell us, and say the spot where it was found? The *vernus* on which I build my thoughts, must have been the same as the one figured by Sweet; for it was bought by the late Lady Gordon Cumming, at that nursery, and, probably, from seeing it in Sweet's. That plant flowered from November till January; and Sweet says, "it is more robust than *Coum*." Gordon says "it is over" before the spring comes in; and here is Mr. Mitchell, who is a self-taught man, and is of the longest practice of us all, says his *vernus* comes in after *Coum*, and is smaller, in all the parts, than *Coum*, which blooms with him in November. Therefore, there can be no doubt whatever, but Mr. Mitchell's *Coum* is the *hyemale*, or winter-flowering kind, and that his *vernus* is our *Coum*. Can any one of our readers authenticate Sweet's description of the leaves and flowers of *vernus* coming from short, flat stems, instead of from the bulbs?]

RIBBON-PLANTED BORDERS.

"I have a south-east flower-border which I wish planted with annuals on the ribbon system, and shall feel much obliged by a list of such kinds as will be suitable. The border is about forty feet by four feet, backed by a five-feet wall, to which I have a few young fruit trees planted. The walks are laid with yellow or orange ashes, which we procure at the ironstone works here, being the refuse or burnt 'blaze' of the ironstone (a very pretty and excellent walk; and when well rolled, resisting frost and rain, and almost as firm as cement), with box edging. I grow good Stocks and French Marigolds on the border, but always fail with Verbenas."—J. COWAN.

[Out of all the host of annuals we possess, we cannot form one single satisfactory ribbon, and we do not know anyone who can. A ribbon four feet wide would need to have all the lines and colours as evenly and as *straightly* as the lines and colours of a clan tartan. The first line should occupy six inches of the width of the border, and not one quarter of an inch more or less; it should be a pure white, or a deep blue. The second row should be fourteen or fifteen inches wide to exactness. Say twenty inches out of the four feet are occupied with the first two rows, that leaves just fourteen inches each to the next two rows; but one of them may be not more than eight inches, and the other may be twenty inches. Their breadth would depend on the colour. But say as we say, and then ask the whole seed trade to supply four kinds of seeds to do this, in the true style of height, colour, and contrast, and to be in bloom by the first of June, and to keep in

bloom to the last day of September, and the four kinds we need for it, would make any man's fortune in one year, if he had a barn large enough to harvest the four seeds.]

THE SCIENCE OF GARDENING.

(Continued from page 315.)

We have never been able to discover that light has any injurious influence over germination; and in those experiments apparently proving the contrary, due care was not taken to prevent the seed being exposed to a greater degree of dryness as well as to light. If seed be placed on the surface of a soil, and other seed just below that surface, and care be taken to keep the former constantly moist, it will germinate just as speedily as the buried seed; and if exposed to the blue rays only of the spectrum, by being kept under a glass of that colour, even more rapidly.

M. Saussure found that when the direct rays of the sun were intercepted, though light was admitted, seeds germinated as fast as when kept in the dark.—(*Recherches sur la Vegetation*, 23).

This was confirmed by Messrs. Lawson, at the Meeting of the Association of Science in 1853. Therefore, the object of sowing the seed below the surface, seems to be for the purposes of keeping it in a state of equable and salutary moisture, as well as to place the radicle in the medium necessary for its growth into a root, immediately it emerges from the integument of the seed.

We are aware that Mr. Hunt arrived at a different conclusion from his experiments; but it is very evident, from his own statement of his experiments, that he did not secure an equal supply of moisture, nor an equal amount of temperature to each sowing. Therefore, it was not the light only which influenced the results.

The seeds were sown in boxes of earth, and all similarly exposed to the sun. Those covered with ruby-coloured glass had an average temperature of 87°; those with red glass, of 83°; those with orange, 101°; those with yellow, 88°; those with blue, 94°; and those with green, 74°.

Mr. Hunt thus narrates the results of his experiments:—

"Numerous experiments have been tried with the seeds of Mignonette, many varieties of the flowering Pea, the common Parsley, and Cresses. The seeds germinated, in general, the most rapidly under the red glass, in the spring of the year; but when the heat of summer has advanced, the temperature of the red light has been too great, and germination has been prevented. Except under the blue glass, these plants have all been marked by the extraordinary length to which the stems of the cotyledons have grown, and by the entire absence of the plumula. No true leaves forming, the cotyledons soon perish, and the plant dies. Under the green glass the process of germination has been exceedingly slow, and the plants, particularly the Cresses and Mignonette, have speedily died."

"Under the blue glass alone has the process gone on healthfully to the end; and, although there were a few instances of a perfect plant under the yellow glass, it on no occasion endured to the formation of a flower; excepting the plants under the yellow and blue glasses, all have been more or less blanched."

"These experiments sufficiently prove, that the process of germination is obstructed by the influence of light on the surface of the soil, although the seeds have been buried some depth beneath it. The effects of heat, as exhibited by the red rays, are not to be regarded as destructive in themselves, as plants have been found to grow under the influence of these rays when they have been supplied with an extraordinary quantity of water, to supply that drawn off by continued evaporation; whereas, although the evaporation, which has been equally rapid under the yellow media, has been met in the same manner as under the red, it has produced no beneficial results."

We draw very different conclusions from these researches. In the first place, these experiments can prove no more than that only one ray of this spectrum is, by itself, injurious to germination; but we know, from actual experiment, that when seeds are buried at the usual depth proper for their cultivation, duly supplied with moisture, and kept at similar temperatures, germination took place nearly equally under every coloured glass employed. So soon as germination was completed, then the coloured glasses varied extremely in their effects upon the seedlings; but were most injurious, as stated by Mr. Hunt. The influence possessed by the interposition of coloured glasses, so far as mere germination is concerned, arises, we think, chiefly from their modifying the temperature and the moisture; but the interception of the

chemical, or actinic rays, may have considerable influence. M. Nicéphore Nièpce, as long since as 1820, announced as a law of Nature, that "Light acts chemically upon bodies; is absorbed by them, combines with them, and imparts to them new properties." In the year just passed, his nephew, M. Nièpce de Saint Victor, has shown that this law is applicable to our cultivated soils. Earth taken from a considerable depth being spread in darkness, produced no change upon paper washed over with chloride of silver placed above it. The same soil was then exposed to sunshine, one half of its surface being covered by an opaque body. Being taken into a dark room, and a similar piece of paper held over it, all that part of the paper over the half of the soil which had been quite exposed to the sunshine became darkened; but that half of the soil which had been shaded, produced no such effect.—(*Annal. Académie des Sciences*).

This demonstration of the absorption and retention of the sun's chemical rays, suggests an explanation of the advantages derived by the exposure of all parts of a soil to atmospheric influences, by trenching and ridging. The actinized surface-soil turned down by the spade, may have an influence upon vegetation more than we appreciate.

A seed placed in a situation where it is supplied with the desirable degrees of heat, moisture, and air, begins immediately to enlarge in size. This is occasioned by its absorbing moisture, which, passing into the cotyledons, causes their immediate increase in size. The rapidity of this process is remarkable, and warns the gardener from disturbing the seed after it is once committed to the ground. A few choice Peas, from which to raise stock, being sown, accidentally, in ground devoted to another crop, were removed after twenty-four hours, and were not again committed to the ground for some days. Not one of them produced a fruitful plant, and only two or three vegetated.

This is in no degree surprising, because in the majority of healthy seeds cultivated in our open ground departments, the embryo will be found swollen within three hours; within six hours the radicle will be perceptible; in from one to six days the radicle will have burst the integuments of the seed; within from two to seven days the plantlet will have similarly escaped; and in from four to twenty-four days perfect roots will have been developed, and the leaves appear above the surface.

Moisture, as already stated, is absorbed, and causes the immediate enlargement of the parts of the seed; and this moisture, though it will and does penetrate through the surface of the integuments, yet is chiefly imbibed through the hilum or scar. It passes to the cotyledons, causing their enlargement, and setting in motion their elaborating powers for the nutriment of the radicle and plantlet; for, if they are removed, or if they have been injured by insects, the seed does not germinate; and if they are removed even after the radicle is developed into a root, the plant's vegetation ceases.

No sooner has the radicle escaped from the seed's integument, than it immediately proceeds to elongate in the direction of the matters most promotive of the future plant's growth. If the seeds of Carrots, Parsnips, Beets, and other fusiform-rooted plants are sown in a soil with its surface richly manured, and its subsoil deficient in decomposing organic matters, the plants will have forked and abundant lateral roots, keeping within the fertile surface soil. On the other hand, if the surface-stratum is only moderately rich, but some manure is trenched in with the bottom spit so as to be about sixteen inches below the seed, the roots will strike down straight to this superior source of nutriment.

From the same cause the roots of orchidaceous plants, grown upon wood only partially charred, will be found to have their roots clamber up, and around, and along the wood, but always directing their course most numerously towards the charred portion. Again, the seeds of the Mistletoe placed upon the under-surface of a bough, always have their radicles grow upwards to penetrate the bark, and thus secure to themselves the moisture without which they could not exist. Lastly, if seeds of plants loving a fertile soil be sown along the partition, dividing a vessel into two portions, of which one portion is filled with rich earth, and the other with sand, though both portions are equally moist, equally loose, and equally warm, all the radicles will direct their course into the fertile soil.

These facts, with many others, all demonstrating that roots travel in the direction where the most acceptable food is presented, overturn, beyond all controversy, Mr. Knight's hypothesis, that the descent of the root is a consequence of the laws of gravitation; for these laws will not explain why roots will grow sidewise, and even upwards, if their best source of nourishment

is so placed as to require it—gravitation could only influence them to a downward direction, and in a fluid medium. To maintain that the laws of gravitation will make the tender radicle of a seed pierce the hardest soil, appears to be a self-evident absurdity.—J.

(To be continued.)

TRADE CATALOGUES RECEIVED.

A Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds, by Butler and McCulloch, Covent Garden, London, is one of those bulky pamphlets that are becoming common among nurserymen and seedsmen, and contains a great quantity of very useful information respecting the numerous subjects which it enumerates. The cultural notes are very good and practical; and as a whole the thing is well got up.

Catalogues Nos. II. and III., by Bass and Brown, Seed-Growers and Nurserymen, Sudbury. The former of these contains florists' flowers and stove plants, and the latter vegetable and flower-seeds. Both are full of useful remarks, which will be of service to growers.

A Priced Catalogue of Stove, Greenhouse, and Hardy Exotic and British Ferns, grown for sale by Robert Sim, Nurseryman, &c., Foot's Cray, Kent. This is a truly admirable catalogue, and contains such a list of Ferns as we never before saw offered for sale. Sixty two pages of closely-printed matter, enumerating and minutely describing 818 species of Ferns: it is not only "a priced catalogue," but a useful volume.

TO CORRESPONDENTS.

SALT IN SOIL (*J. Robinson*).—To detect it, pour some sulphuric acid on the soil, and then hold a cork, dipped in a solution of ammonia, over it. If there is much salt in the soil, a white vapour will appear about the cork. Iron hotbed frames are not so good as wooden. Their weight renders them cumbersome. Their great expansion and contraction by heat and cold; their being hotter in sunshine and colder in inclement weather than wooden frames, render these last-named preferable.

HEIGHT OF TREES (*X. Y. Z.*).—If you are acquainted with the use of the graduated scale and compasses, and can take an angle with the quadrant and plummet, you can easily ascertain their height, without measuring; but we cannot explain the mode without a drawing. Any schoolmaster will show you how to proceed.

BOOKS (*G. L.*).—There is no better book for your purpose than Mr. Kemp's "How to Lay out a Garden;" and the best companion you can have for cultivating it is "The Garden Manual," published at our office.—*A Constant Reader* will never be able to make anything of the "Introduction to Botany" he inquires about. We would recommend him and *A Subscriber*, who wish to obtain a knowledge of that science, to study the subject from Henfrey's "Elementary Course," or Balfour's "Outlines of Botany;" both are clear and concise, and quite unlike those *quasi-philosophic* compilations from the abstruse treatises of the German schools, (*Philo*).—You will find a very good account of the Bordeaux wines in Cocks' "Bordeaux: its Wines and Claret Country," (*Kate*).—We believe there are several manuals of flower painting, but we do not know any one in particular; refer to your bookseller.

MINERAL DESTROYER OF SNAILS (*E.*).—We have no further information on the subject; but will inquire.

RENOVATING TURF (*W. H. S.*).—You may sow your Clover seed now. We have just been sowing Crested Dog's-tail and Fine-leaved Fescue, for the same purpose, on a chalky soil. We have reason to think that September is the best time for sowing grass seeds.

SKELETON LEAVES (*L. Lucas*).—We have repeatedly published the tedious mode by long soaking in water, and we know of no other.

ASHES FOR PLUNGING (*Cinders*).—They are better than common soil for the purpose of plunging pots of seeds and plants in.

PODOLIAN BEEHIVE (*J. S.*).—We are sorry our experience will not enable us to assist you with advice in your project of stocking a beehive "four feet deep and twenty-four inches broad," and are rather inclined to the opinion, that you would do wisely in turning your attention to some more promising speculation. At all events, we cannot recommend any attempt to drive the bees "in the mouth of May, from a hive on the point of swarming." As regards the mode of uniting families in the swarming season, almost any of the books on bees will give you the necessary instructions.

OPENING VENTILATORS (*A Country Subscriber*).—The simultaneous opening of the ventilator-lights was only suggested by Mr. Beaton. The greenhouse he wrote about is not so ventilated, as all hothouse-builders know and practice the simultaneous movements; and as gardeners cannot build their own houses, of what use would it be to go to the expense of engraving a sketch of it? The extra expense of the simultaneous opening of such a house, forty feet long, by Mr. Macrostie, is from 30s. to 50s., according to the value of the materials used. Your best plan is, to hinge the lights to the ridge, whether you open by single lights, or the whole by one pull. You need have no fear about the wind having more power on the one than on the other.

CYCLAMEN VERNUM (*A. B.*).—Your *Cyclamen* is *Coum*, and thousands are in a like fix. It is very questionable if there is a true *Cyclamen vernum* on sale in Europe. Of all the men who have given drawings and descriptions of any of the *Cyclamens*, Robert Sweet was, undoubtedly, the best gardener, and, therefore, the most likely author to be practically in the right. His description and figure of *vernun* show it to be stronger

than *Coum*, and to be different from all other *Cyclamens*. The difference being, that neither the leaves nor the flowers come directly from the tuber; but from short, thick, flat, fleshy processes, which rise from the tuber. Unless anyone can send us one of those gouty stems, with the leaves on it, and also the flowers, if any, it is only "love's labour lost." Anyone can tell if the leaves come, or do not come, directly from the tubers, and that is the best sign to distinguish *vernus* from *Coum*.

TACSONIA MOLLISSIMA (*George Meadows*).—As you cannot get command over the roots, renew the plant once in five or six years by strong-rooted layers made from the plant the preceding year. Cutting it down will do neither good nor harm; but try it, and make sure of a layer or two from the first shoots. Make your stable drainage of the strength of one gallon of it to six gallons from the pump, and pour it on the meadow.

ELEVEN CLIMBERS FOR A SOUTH-WEST VERANDAH (*Guildford*).—On the pillar next the door or windows, plant *Aristolochia*, for its large leaves and its agreeable shade all summer, and it is never infested by insects. Plant the next pillar with a climbing Rose, for temporary use. All old climbing Roses are constantly being grubbed up, where near the door, on account of the fly—and the worse than the fly, the bad smell of some quack stuff to stifle the pest. Third pillar, the most delicious, and the most bearable smelling flower we have in climbers, the Japan Honeysuckle, *Lonicera Japonica*, alias *flezzosa*, and alias *Chinensis*. The fourth, another climbing Rose. The fifth, *Jasminum nudiflorum*. Sixth, a climbing Rose. Seventh, the common white Jasmine. Eighth, a climbing Rose. Ninth, *Clematis Sieboldii*, and the common blue Passion-flower on the same pillar. Tenth, a climbing Rose. Eleventh, *Chimonanthus fragrans*, a true pillar plant, though not a climber, and supplies the place of the Japan Honeysuckle in winter, by blooming profusely, the next sweetest of such kinds. Some people plant it near the windows, when there is no verandah, or when the verandah is full; but as we cannot enjoy the sweet perfume of flowers with frost and blustering winds, we should not lay ourselves, or our windows open to the temptation: much better to be content with the perfumed breezes of a whole summer by the Japonicum. The Roses should be *Ayrshires* and *Sempervirens*, *Ruga* and *Dundee Rambler*, for the former; and *Princess Marie*, *Myrianthus*, *Félicité Perpetuelle*, and *Rampant*, for evergreen Roses.

GERANIUM TRICOLOR (*Rose*).—After this gets into bad health, there is not a plant in cultivation more difficult to restore. It is by far the cheapest plan to begin with a young healthy plant in a very small pot, and growing in nothing else but sandy peat. It requires exactly the same kind of soil, the quantity of drainage, air, and cold, as the average of Cape Heaths. Many kinds of loams and mixtures are certain but slow poisons to it; but, like Rhododendrons, there are kinds of loam, of which one-third with the rest of peat, would do it good; but there is no way of knowing the loams but by trials. All the double Primroses of the China breed are propagated by cuttings, and grown in very light, and very rich sandy soil; and in the winter they are watered from below by a feeder or saucer.

HOGG'S VEGETABLE KINGDOM (*D. S.*).—If you have this work only as far as the Grasses (page 832), you require one more part to complete the volume, which extends to 882 pages. Your bookseller will procure it for you.

KIDDEAN SYSTEM OF PROPAGATION (*C. C. Hopkins*).—This is placing cuttings in a vial half full of water, and half with sand, so as to keep the cuttings upright, for rooting Oleanders, and such like. If you fill anything with water, and as much sand as will keep up the cuttings, and give them 70° of heat, they will all root, and astonish you with the ease with which they will do it in so short a time, and with hardly any trouble.

NAMES OF PLANTS (*W. Gater, Teignmouth*).—Your plants are as follows:—1. *Polystichum angulare*, the soft Prickly Shield Fern. 2. *Polystichum aculeatum*, the common Prickly Shield Fern. 3. *Pteris Cretica*, an evergreen, greenhouse, or stove Fern. 4. *Lycopodium casuum*. 5. *Lycopodium Stoloniferum*, we believe, from the very small bit sent. (*R. L.*).—Your No. 1. is *Correa ventricosa*. 2. *Clinanthus paniculus*. (*An Amateur and Lover of Flowers*).—Your plants are:—1. *Mentha rotundifolia*; variety, *variegata*. This plant, though hardy, is often nursed now-a-days, and made from cuttings, like *Tom Thumb*, and other things for bedding purposes; and from the appearance of your tiny specimen, your plants have been coddled up in your greenhouse among other things that have, probably been covered with red spider, which the syringe could soon put an end to. 2. *Cyanotis vitellina*. 3. *Agathosma ciliata*. 4. is of the *Kennedy* or *Hardenbergia* family. We are uncertain what species, without seeing it in flower. Pretty greenhouse climbers; they are apt to be subject to the red spider. Lay the plants on their sides, and well syringe them a few times; taking them out of the house to do so. The *Kennedyas* and *Hardenbergias* are hardy greenhouse climbers. (*A. Robertson*).—The specimen sent is from one of the serrated broad-leaved varieties of the evergreen Oak, *Quercus Ilex*, or Holly-leaved Oak. They are increased from seed by the thousand by our nurserymen. We could have raised tens of thousands this season from our own trees. The jack-daws have been living upon the acorns all this winter, and still we may have hundreds come up all over the garden.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

FEBRUARY 23rd and 24th. BOLTON POULTRY, PIGEON, AND CANARY SHOW. Secs., William Chester and Robert Greenhalgh, Bolton. Entries close February 17th.

MARCH 15th, 16th, and 17th. SHROPSHIRE. Sec., T. W. Jones, Church Street, Wellington, Salop.

MAY 25th and 26th. BEVERLEY. Sec., Francis Calvert, Surgeon, &c.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Pitman, Esq.

N.B.—Secretaries will oblige us by sending early copies of their lists.

TRIMMING SPANISH FOWLS.

We admired the little discussions that took place some time ago, about Spanish fowls. Although parties differed, everything

connected with the differences was carried on in such an amicable and kindly spirit, that good only could result from it. If all points are discussed in the same way, a proper understanding will soon be arrived at. This time, the recess between the winter and summer Shows, is, perhaps, the best time for us to revert to the subject. There was no question as to the real merits of the birds. All those points were settled long since; and the most essential was, a perfectly white, large face. The greater the amount of white *over the eye*, the more meritorious the bird. All highly-bred birds have white skin to the root of the comb; but it is only the very best of them that have it sufficiently developed to displace the feathers, and make the white apparent. To accomplish this, many were shown trimmed,—entirely denuded of feathers between the eye and the comb, save a little black line. This led to disqualification; and then some said that all were trimmed; while others contended it was a fair practice. We abstained from any notice, beyond comment in reports; but now, in our leisure, we revert to it.

Those who breed Spanish fowls largely, from really first-rate stock, know the difficulty of breeding these birds that show a round face over the eye, without trimming; but they also know it can be done, and many exhibitors prove it. Now, if the object of competition be to encourage great purity, excellence, and beauty of breed, then—whether the pursuit be the hobby of a rich man, careless of anything but the honour of the prize; or of the amateur, whose means make it necessary his *penchant* should be self-supporting; or of the pure lover of exhibitions—it must be evident, that the question must be decided against trimming. It is no new subject. In the early days of Shows, Cochins' tails were pulled out, and black hackles disappeared. Since then, we have, in some classes, had painted legs and coloured beaks. These have, however, disappeared before the expressed determination of Judges, and most exhibitors, to disqualify, or pass over, all birds similarly prepared. We do not accuse those who have shown trimmed birds of any dishonest intention. We know that many have done it openly, have never attempted to conceal it, and have at once admitted it. They have been persuaded by others that it was right and fair to do so; and thus birds that should have been easy winners have been passed over. Some, with a candour worthy of imitation, have expressed themselves satisfied to be losers now, by the pleasure it afforded them to know that in future birds must be naturally shown. We cannot help expressing our sympathy with some who have purchased trimmed or plucked birds at large prices, and have found them useless for exhibition. Some such were seen at the Crystal Palace Show—one hen in particular had a broad white line between the eye and the comb. It had been pulled some time before; but either the owner had repented, or they had not long been his property, for three perfect rows of young feathers were seen, straight and correct, as if the skin had been drilled with feather-seed, which were coming up well. One well-known and ingenious exhibitor, so far from denying the plucking of his birds, justified the process, and took some merit to himself for bringing more prominently into sight that which was admitted to be a beauty. He, however, objected to removing his lips, in order that his teeth (which are really good) should be better seen.

Before Spanish fowls are again wanted for exhibition, they will have moulted; or, at any rate, if they have to go to summer Shows, the feathers that have been removed will have grown again. We have been at some pains to ascertain the opinions of our principal Judges. They unanimously condemn the practice, and will not award prizes to trimmed birds. We have also been in communication with many of our best breeders and exhibitors in this class, and they cordially agree with the Judges. We believe uncertainty on this point, together with disinclination to trim while it appeared hopeless to compete without that process, interfered much with Spanish entries at many recent Shows. These causes will now be removed, and the classes will increase; because none but birds naturally shown will be allowed to take prizes. We rejoice at it; because we believe it is for the good of the breed quite as much as for the satisfaction of the amateur.

ULVERSTON POULTRY EXHIBITION.

ALTHOUGH the number of entries at this Show was somewhat smaller than that of last year, there cannot be a second opinion but that the superiority of the Show just closed over the two preceding ones was unusually great; scarcely a pen of indifferent poultry being to be met with throughout the whole exhibition.

In *Spanish fowls*, the cup was secured by a most excellent pen belonging to Mr. Richard Teebay, of Preston; closely pressed, however, by those of Mr. Sylvester, of Sheffield, to which the second prize was awarded. The commended and highly-commended fowls in this class were also very good.

In *Grey Dorkings* Capt. Hornby held his own, and took the cup; being closely run by some excellent fowls exhibited by Mr. Ullock, of Windermere.

The competition in *Game* was most spirited; G. W. Moss, Esq., of Liverpool, gaining the cup with first-class specimens. In *Whites* and *Piles* Mr. Ellison was triumphant: and in *Game* of any other variety, Mr. Brocklebank, of Ulverston, was successful.

The *Cochins* only mustered two pens—both good, but neither worthy of particular mention.

In *Golden-pencilled Hamburgs*, Messrs. Carter and Gaulter, and Mr. Titterton divided the prizes; Messrs. Dixon and Chune attaining highly-commended positions. In *Silver-pencilled*, Mr. Keable, of Devizes, won the silver cup easily, although many very superior birds were opponents. In *Golden-spangled Hamburgs* Mr. Chune was victorious. The cup for the best pen of *Spangled Hamburgs* of either variety, however, went to Mr. Dixon.

It is very gratifying to us to mention the fact, that the *Polands* mustered an excellent display. The *Blacks* were all that could reasonably be wished for; whilst not a single pen throughout the whole escaped honourable mention.

In the class for *any other distinct or cross breed*, *Black Ham-*
burgs and *Brahmas* were the successful varieties.

In *Sebright Bantams*, the *Gold-laced* were far superior to the *Silvers*. In other *Bantams*, capital birds of both *Game*, *Blacks*, and *Whites* competed. The cup was eventually awarded to a pen of *Black-breasted Reds* belonging to Harvey Dutton Bayley, Esq.; and well did they support the credit of that gentleman's *Bantam* stud.

Only three pens of *White Aylesbury Ducks* were shown; but we scarcely call to mind having ever seen them better. Some *first-rate Call Ducks*, and *Buenos-Ayrian Ducks* were exhibited in the extra class.

We now come to one of the most important and best collections in the whole Show—viz., the class for *Single Game Cocks* of any age or colour; in which there were twenty-seven entries, from most of the principal *Game* exhibitors in the kingdom. The cup-bird was a brown-red stag, belonging to that well-known breeder, A. Sutherland, Esq., of Burnley, who may well be proud of the high position. This bird, we are told, was never before in an exhibition pen; and it is impossible to conceive higher condition than all this gentleman's birds displayed, his first-prize *Game Chickens* in the following class being equally well shown.

The two remaining prizes for *Game Cocks* were both won for Liverpool by Mr. Joseph Hindson and Mr. G. W. Moss. Mr. Hindson also won the second prize for *Game Chickens* with a truly excellent pen. In *Spanish Chickens* Miss Hyde, of Moss Cottage, Ashton, was triumphant; not, however, without a hard struggle, with two pens, that (one prize only being offered), could but be highly commended. In the competition in *Game* for the neighbouring district of Furness only, many most praiseworthy pens strove hard for the mastery. Edward Swainson, of Niblwaite, Mr. Thomas Robinson (the indefatigable Secretary of the Show), and Mr. T. Cranke, of Ulverston, being the successful competitors.

There were but very few empty pens from the non-appearance of birds duly entered. The few instances which did occur were made ample amends for by the introduction of a collection of water-fowls, the property of a gentleman residing near Ulverston. They consisted of *Mandarin Ducks*, *Carolina Ducks*, *Canada Geese*, *Spanish Geese*, and *Toulouse Geese*. They, of course, were not entered for competition, but were undoubtedly shown in the most extraordinary health and plumage conceivable; they, therefore, received the highest commendations of the Judge, Mr. Edward Hewitt, of Spark Brook, Birmingham, combined with the best thanks of the Committee for the additional attractiveness thus conferred on the Exhibition.

We marked, with peculiar pleasure, the unwearied attention paid by the Committee to the poultry generally; and for scrupulous cleanliness of the pens and general management, the Ulverston Committee left nothing unprovided for—every detail being thoroughly carried out under their own personal supervision.

We regret to say, on the day of opening, the weather was the very reverse of auspicious, the rain being continuous; nevertheless, there was a goodly muster of amateurs, some having travelled from very distant localities.

BRAHMA POOTRAS.

IN reply to your correspondent "SALOP," whose sensible remarks appeared in THE COTTAGE GARDENER of February the 8th, I am very pleased to assert, conscientiously, that, although one of the oldest breeders—and, I may also add, the most successful exhibitor of these persecuted, but most hardy and useful birds—I have never known them throw a Malay, Dorking, Cochin, or any other kind of fowl, than a real genuine Brahma Pootra.

Last year, I purchased a cock to send abroad, and allowed him to run with a few of my own hens. I had one large brood of seventeen from this cross, many of which were of a sandy colour, and some almost white, which I had killed as soon as they were large enough for the table. But from my own birds, which I know to be genuine and unmanufactured, the colour and pencillings are maintained throughout.

Three years since, I supplied a gentleman in Berkshire with two or three sittings of Brahma eggs, which hatched remarkably well: and some time after, wishing to see the produce of these eggs, I asked a friend (a poultry amateur) to accompany me in my drive to see the birds. He did so, and was so struck with their uniformity of shape, colour, and pencilling, that he exclaimed, "Well! I should think no one could, after seeing these birds, doubt their being a pure and unmixed breed." I know not their equal in laying; frost and snow do not hinder them; and those who value an egg for breakfast in winter, when other birds have ceased to lay, should possess these fowls. And this is not all. Unlike the *Cochins*, which in shape they resemble, they are excellent on table; their flesh is tender, delicate, and well-flavoured; and when my wife wants to give her friends a treat of poultry, she always gives them Brahma Pootras. Doubtless, some will say, on reading these lines, "Mr. Botham wants to sell his eggs." So I do: but had it not been for the constantly-recurring attempts to run down our great favourites, I should not have taken this method of advertising them.—GEORGE BOTHAM, Wexham Court.

OUR LETTER BOX.

COCHIN HENS (T. S.).—What you suppose to arise from a diseased anus, is a deranged state of their bowels and ovaries, from excessive feeding. Give them food but twice a-day. Let them have no more wheat, but barley and oats on alternate mornings, and soft food at night, in which let there be more boiled rice and potatoes than barleymeal. The horseradish growing in their run will not hurt them.

HEN GOING TO HER NEST (Lizzie).—All the symptoms show, that the hen's egg-system is over-active. Put her on low diet, as above recommended, and give her a dessert-spoonful of castor oil twice a week, until the symptoms abate.

TELLING THE SEX IN EGGS (A. E. E.).—Many pretend to do this; but we never found anyone whose predictions came true. It is said, that the rounder eggs produce pullets, and the longer ones cockerels.

DISCHARGE FROM A PIGEON'S EAR.—Can you inform me what will cure a running matter (like wax), at the ears of a Pigeon? I have a very valuable Dun Carrier cock affected in that way.—CHARLES —.

[We are not acquainted with such a disease of the Pigeon. Anointing with oil may very likely afford relief. Possibly the discharge may arise from canker in the ear, in which case we would advise washing the part with warm water, picking out the tumour, and touching the part with caustic. Once effectually doing this is much better than two or three timid attempts.—B. P. B.]

ROUP IN FOWLS (Constant Reader).—By stale is meant urine, not "stale beer."—H. C.

DEBTORS FOR POULTRY (T. S.).—The party being well-known, and having asked for time, renders it a mere matter of simple contract debt. When your patience is exhausted, sue your debtor in the County Court.

CUCKOO FOWL (T. J. B.).—It is difficult to say whether the Cuckoo fowl is a distinct breed. Our own impression is, that it is an off-shoot from the Dorking. The colour is common among that breed; and the birds are remarkable for their pure white legs, and their tender and delicate flesh. Our opinion has always been, that if they are five-clawed they should be shown as Dorkings. If shown as a distinct breed, they should have but four claws; but might have either single or double combs. In either case, they must have white legs. The cock should be free from red or yellow feathers; but every one who has bred Cuckoos of any breed, Dorkings, or Cochin, knows the tendency they have to throw coloured saddles and hackles. The ear-lobe is immaterial. They are hardy.

TUMOUR IN A FOWL.—"I have under my care a white Cochin-China cock, which has growing from between the breastbone and the front part of its wing, a large tuft of feathers. The base of the tuft is as thick as a moderate-sized egg; and the feathers nearly as strong as those of the tail. Could you tell me how to remove it without injuring the bird? Might I cut it out? Last autumn I thought I had quite rooted it out; but it is now growing again. It is only skin-deep, as I can gather it between my fingers and thumb. I should like to have it removed, if possible; as the bird is constantly pecking it and making it bleed."—N. J.

[You will have no difficulty in removing the protuberance, if it have no fibrous connection with the breast. It should have been done before it attained its present size. Such tumours are common, but not covered with feathers as you describe. We should recommend you to pluck the feathers from it some days before you operate. There is scarcely any operation a fowl will not bear and speedily recover; but if this is connected with the breast, it will be merciful to kill the bird rather than make it suffer an operation that will be useless.]

WEEKLY CALENDAR.

Day of M'nth Week.	Day of Week.	MARCH 1-7, 1859.	WEATHER NEAR LONDON IN 1858.									
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
1	TU	Dryandra armata.	29.553—29.532	34—29	N.E.	—	43 af 6	38 af 5	49 m 5	26	12 38	60
2	W	Correa pulchella.	29.635—29.613	34—28	N.E.	—	46 6	39 5	6 6	27	12 26	61
3	TU	Acacia dealbata.	29.715—29.621	36—24	N.E.	.21	44 6	41 5	20 6	28	12 14	62
4	F	Camellia Colvilli.	29.766—29.436	43—23	N.E.	—	42 6	42 5	sets.	20	12 1	63
5	S	Eriostemon cuspidatum.	29.576—29.398	41—25	N.E.	—	40 6	44 5	50 a 6	1	11 47	64
6	SUN	SHROVE SUNDAY.	29.004—29.000	42—27	N.	—	37 6	46 5	5 8	2	11 33	65
7	M	Banksia media.	29.211—29.933	43—31	N.	—	35 6	48 5	22 9	3	11 19	66

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-two years, the average highest and lowest temperatures of these days are 48.6° and 32.9°, respectively. The greatest heat, 71°, occurred on the 3rd, in 1853; and the lowest cold, 13°, on the 5th, in 1845. During the period 145 days were fine, and on 79 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

ARTICHOKEs.—Thin out the old stools, and make new plantations. Plant three rooted suckers triangularly, at one foot apart; the triangles to be three and a half or four feet apart.

ASPARAGUS.—Presuming that the beds have been covered with rich dung, as recommended in November, they should now be forked up, to loosen the ground for the more free admission of sun and air. A slight sprinkling of salt, carried down to their roots by rains, will be of service to them.

BORECOLE.—Sow a small quantity.

BRUSSELS SPROUTS.—Sow a small quantity.

CARROTS.—Thin out those in frames.

CELERY.—Sow on a slight hotbed, for the main crop, if not done as advised last week. When the early-sown is up, give it air at all favourable opportunities.

CUCUMBERS.—Linings should be applied to the beds, before the heat declines considerably. The linings should be made up to the top of the frames. Air to be given daily. If cold winds prevail, a piece of matting, or thin canvass, tacked over the opening, will exclude them.

HERBS.—Divide the roots, and make fresh plantations where necessary.

LEeks.—Sow a full crop of the *Large Flag*.

LETTUCES.—Make a successional sowing, and plant out from the seed-beds, in rows, one foot apart each way. The market-gardeners around London are now planting out acres of young plants.

ONIONS.—Sow the main crop. The *Reading*, *Deptford*, *James's Keeping*, are good sorts; and the *New Giant*, of very large size, is worthy of cultivation. Plant out the autumn-sown at nine inches apart.

RADISHES.—Keep up successional sowings.

SAVOY.—Sow a small quantity of the *Green*.

SEA-KALE.—Sow seed, and make fresh plantations.

SPINACH.—Make a successional sowing of the *Round sort*.

TURNIPS.—Sow a small patch of the *Early Snowball*, for an early crop.

FRUIT GARDEN.

CURRENT and GOOSEBERRY TREES.—Draw away the soil, about two inches in depth and two or three feet in diameter, from their stems with a hoe; sprinkle the cleared space with some soot and wood ashes, returning the earth with the back of a rake. It will be not only a preventive to the attacks of caterpillars, but will also act as a very stimulating manure for the trees.

FRUIT TREES.—Planting, pruning, and nailing, should now be forwarded as much as possible. These operations cannot be finished a minute too soon. The sap having now fairly and rather vigorously commenced its ascending course, broken-off flower-buds and injured shoots will be the certain consequence of neglect and delay. Continue to protect the bloom of Peach, Nectarine and Apricot trees.

GRAFTING.—Commence with the most forward sorts.

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When the joining has been made, by cutting and properly fitting the bark of the scion to the bark of the stock, at least on one side thereof, it must be bound with a riband of bass, so as to prevent this junction from being deranged. It is then covered with a ball of three-parts clay, free from stones, well-worked with one-part of fresh horse-droppings and a little finely-chopped straw; the whole about an inch thick, and three inches or more in length.

FLOWER GARDEN.

ASTERS.—Sow the *German* and *French* on a little heat.

BEDDING-OUT PLANTS.—Estimate the number required, in order to get the stock propagated without delay. Maintain a kindly heat in the cutting-frame. Top the cuttings that have taken root, and are beginning to grow. Put in a sufficient quantity of *Heliotropes*, *Verbenas*, *Ageratums*, *Petunias*, *Geraniums*, and other such cuttings, for filling up the beds and borders.

CHRYSANTHEMUMS.—Put in cuttings or offsets; they will do well in a cold frame.

LOBELIAS (Herbaceous).—Divide, and pot them in small pots.

STOCKS.—Sow the *German* and *Ten-week* in pots or pans, and place them in a cold frame, or one that will soon cool down.

TULIPS.—Examine the foliage frequently; remove with a knife every particle of canker as soon as it is observed. Keep the beds free from weeds, the heart of the plants free from dirt and the lodgment of water, and the surface loosened about an inch and a half deep when the weather is favourable.

VERBENA VENOSA.—Put the roots in pots, or boxes, and place them in heat, to increase the stock. Mixed with *Golden Chain*, *Flower of the Day*, or any other variegated *Geranium*, it makes a very attractive bed.

WILLIAM KEANE.

LAYERING ROSES—OLD SAMUEL GILBERT AND HIS CYCLAMENS — CARNATION CUTTINGS.

"WHICH is the best way to propagate Roses for bedding out? And which is the best Rose for that purpose, without including China Roses?"

Mr. Paul, the great Rose grower, who takes first prizes and writes so well on Roses, says that his own seedling Rose, called *Bacchus*, is one of the best bedding Roses we have—a better one than *Géant des Batailles* for beds; *provided always, it is grown for beds on its own roots*—an admission, from such authority, that is worth just five thousand a-year on the Rose household. I should like to form an alliance with Mr. Paul for this very thing—that is, to propagate Roses for flower-beds, as he says, on their own roots. He took great pains to select the histories of Roses for his excellent book, so as to make the book as agreeable as it was useful; but he, or any other author, never found out who first introduced the plan of grafting and budding Roses on other than their own roots.

I was once a great advocate for worked Roses, and for a selection of stocks; but I found out the foolishness of that idea long since. Of course, we cannot do without working all new Roses till they are as cheap as old ones; and of course, also, we must work standard Roses as long as there is a call for them. But the moment a Rose is common—I do not care a fig what Rose, or what kind of Rose it may be—I maintain with all my force and convictions, that the best way to have it in a bush, bed, or border, is just as Mr. Paul says is the best for *Bacchus*. That is the result of my own experience during the last forty years. And here I will add the force of an equal amount of experience just two hundred years ago; when an authority of that time says, "the Rose, the divers and excellent kinds thereof, are one of the chiefest ornaments that enrich our gardens;" when the "best stocks to inoculate upon, which must be done about Midsummer, are the *Damask*, *White*, *Francford*, and the wild *Eglantine*;" which, as far as I can make out, meant then the Dog-Rose rather than the Sweet Briar. The true Eglantine was the Sweet Briar; and the "wild Eglantine," the Wild Briar, or Dog Rose. "All stocks of budded Roses must be kept from suckers, and the buds inoculated as near the ground as may be; that, after one year's growth, the budded lance may be laid in the earth to root." That is just what we ought to do, and attend to propagate our new and scarce Roses by buds or grafts, "as near the ground as may be;" so as to be able to layer them the following year, in order to get them on their own roots—because then each of them "becomes a natural tree—one whereof is worth two others that are only budded or grafted; for that every sucker that comes from them will be of the same kind." This shows that the value of a Rose, on its own roots, was only "worth two others," about two hundred years ago. How much, suppose you, is the relative value of a low-worked Rose, and one on its own roots, now-a-days? The value in the market is not so much as the price of "two others:" but the practical value of the self-rooted Rose is not now under one to fifty, at least, over that of a worked Rose, no matter on what stock.

This is just about the time the best gardeners layered their Roses two hundred years back, and in this manner: "First prick about a joint, that will lie in the earth, many holes with an awl, and then cover it with good mould: this done in the spring, and so pegged-down that it rise not again—if watered now and then in dry seasons,—by autumn will be so rooted as to be removed, and cut from its other part behind the roots, and becomes a new tree." In the later history of the Rose, we find the way of laying Carnations adopted with it.

When I was in the Experimental Garden, in Edinburgh, the largest growers of Roses in Scotland were the Peacocks, in Leith Walk, and all their layering was done with the tongue on the upper side of the Rose shoots, instead of on the under side, as with Carnations; and the reason was, that Rose shoots are so brittle, as to be very liable to snap at the bend when the tongue is made on the under side. Since then, a friend of mine, up from the Perth nurseries, invented a clever and an easy mode of layering Roses. The plan is called after his own name,—"Munro's system of layering." Mr. Munro drove the point of his knife right through the middle of the shoot, where the bend and the roots were to be. This made an open slit of an inch, or nearly two inches in length; but when he took back the knife, the slit closed again to all appearance. He then put a bit of wood in it, and that kept it open; and in that open state he bent the shoot, and buried it two inches deep in the soil. The roots came all round the whole of the slit, so thick as to hide the open gap altogether with roots. It is a very safe way to layer Roses, and very easy to do; but, I should think, the old way of pricking holes through the joint, at the bend, for layering was still easier, and quite as good, provided the awl is as big as a bodkin, so that

the holes could not close with new wood till the roots came.

At all events, this is just the time to try all the three ways; and, if I had to layer Roses, I would try the three ways on several plants, to see which was really the best way for making roots. You cannot hurt a Rose by layering every shoot it made last summer, if it made them low enough and long enough to get them into the ground. The best gardener of the old school said, "Since all (worked) Roses are apt to yield suckers, therefore, the surest way to increase any, is gently to bend down part of a tree, or the whole, in the spring, as before expressed, and lay all the branches as before directed in the ground, and apply to them old and well-rotted dung, about the places where they are laid. It will make them root the sooner; and you, by autumn, have as many rooted trees of the same kind as branches laid in the earth, without prejudice to the old one; and when the new ones be cut off, may be easily brought to its place again, and the next year bear as plentifully as ever. Nor does this hinder the bearing of the flowers; for the branches laid will be as plentifully stored as if the tree were erect and not laid; so that they lose neither the profit nor pleasure of that year, and tree-Roses bearing Roses."

All these remarks show, unmistakeably, that people knew the nature of Roses two hundred years back, just as well as we do at present, and that the practice of worked Roses was as objectionable then as it is now.

The author from whom I have here quoted, has not been referred to in any of our gardening books of this, or the last generation, as far as my reading goes.* The work is called "The Florists' Vade Mecum, by Samuel Gilbert," published in London in 1693. Gilbert was a good florist of his day, and the experience of a long life is well explained in his "Vade Mecum." He is the only author, that I have perused, who recommends cuttings to be made in the spring of Pinks, Picotees, and Carnations. But he says they will do both in the spring and in the autumn, and I should like very much to hear of his plan being tried this very spring. These old authors seem, from the practical turn of their writings, to have recommended nothing but what they had themselves put in practice. If, then, pipings of the Carnation family rooted from spring cuttings, there is no reason to doubt but that they will do so at the present day; but, old as the practice is, let us try it over again, if only as a novelty.

I am indebted, for the perusal of the book, to the kindness of a reverend gentleman—one of our constant readers—in a distant province, who sent it to show what Gilbert says about Cyclamens; and I find he knew more kinds of Cyclamens than we do, only the *Persicum* breed was not then introduced. There were double-flowering Cyclamens in his day: and the confusion about *hederæfolium*, which exists in our time, was prevalent in Gilbert's time, although the proper name was given by Clusius at the beginning of that century (1600), *Cyclaminus hederæfolio verno tempore florens*—that is, the Ivy-leaved Cyclamen flowering in the spring. But Gilbert, like some of our own florists—and others more to blame, like M. Van Houtte, of Ghent, and Dr. Planchon, who does the botany in the "Flore des Serres,"—gives the "Ivy-leaved Cyclamen of autumn," as "of the palest purple colour."

The *Cyclamen vernum* was certainly cultivated by Gilbert 200 years ago; for he describes it just as Mr. Gordon has done about the white markings in the leaves being so much like the markings of *Persicum*. "The spring Cyclamens," he writes, "are preferable before the rest; but the double ones most of all, and hardest to be got. Their leaves fashioned almost like Coltsfoot leaves,

* If Mr. Beaton will refer to page 107 of our sixth volume, he will find this very book very particularly mentioned and commended; and a note, that "it marks the transition period in the history of gardening—it savours both of the good time advancing, and of the dark time passing away." We so said, because, although there are in the book many excellent directions for cultivation, evidently founded on practice, yet there are, also, not a few remnants of superstitious practices recommended.—EDS.

but have some indenting on the edges; some more, other sorts less; some longer; some rounder; all of them strangely variegated, spotted, and circled with white; green about the middle of the leaves on the upper side, but that side underneath is red." Again, about their flowers, he says, all of them in five divisions, "some of them a bright, shining, reddish purple as the vernal one;" this is *vernus* with the "strangely-variegated leaves;" and "another that flowers in the spring is of a pale purple: there are also vernal white ones, single and double." This last is the true *hederaefolium* of Clusius. Gilbert does not mention any one like our *Coum*. Like the rest of us, he says, "they seldom increase by roots; therefore, are raised by seeds. The head or vessel that contains them shrinketh down, winding the stalk in a scroll about it, and lieth on the ground hid under the leaves, where it groweth great and round, containing some small seeds, which must be sown as soon as ripe, in good light earth, in pots or boxes." After two year's nursing, just as we do, he says, "probably they may yield you some variety, either in flower, shape, or marking of their leaves."

This very shape and size of Cyclamen leaves, without crossing, have been set up by living botanists as marks of botanical species. Look at *Cyclamen Neapolitanum*, under the name of *macrophyllum*, in the "Flore des Serres," which is identical with *Africanum*, of English nurseries; because the plant came from Algiers, and because the leaves grow broader there than they do at Naples, and much broader in Naples than in Kent or Suffolk. But in all these localities, and in Sicily, this same Cyclamen always blooms in the autumn; and is the Ivy-leaved Cyclamen of Gilbert's "Vade Mecum," and of most British gardeners. But Clusius pre-occupied the name of Ivy-leaf; and Tenore, finding Gilbert's plant without a name, called it the Naples Cyclamen, or *Neapolitanum*: and Planchon first, and Dr. Lindley second, ought to have seen to that, and not to have added to the mass of confusion which I have been looking through to see if I could catch *vernus*.

But, about propagating Cloves and Carnations in the spring, Gilbert says, "Indeed, both spring and autumn are good seasons for making out roots." From the middle of February to the middle of March, he says, is the best time for spring cuttings. First of all, he cut off whole shoots, and put them in water for twenty-four hours; then he cut them at a "joyst," just as we do, trimmed off the bottom leaves, and cut the tops off from those he left; put them in, as we do, in sifted soil, and in the shade, and watered them, from time to time, in dry weather. His name for them is "*Caryophyllus hortensis*, called July flowers from the month they bloom in."

I shall try his way of layering Roses, and also this plan of spring cuttings of some Cloves and Carnations; but I want many results to establish the practice, from the hands of many witnesses.

D. BEATON.

SHORT CULTURAL NOTES.

HEDYCHIUM CORONARIUM.

"WILL this thrive in a common greenhouse? The stems are gone; and the roots look as if they were decaying."—It may be kept in a greenhouse in winter, in a temperature not often below 45°; provided the shoots were pretty well ripened-off the previous autumn, were removed before winter, and the roots were kept dryish all the cold, dull season, with merely as much moisture as would prevent the roots shrivelling and drying up. This is often best effected by setting the pot on a damp substance; and, perhaps, surrounding it for half its depth with some substance rather moist than dry. The pot will thus absorb as much moisture as the plant needs; and there will be less likelihood of making the roots too moist in such a cool temperature, as would be apt to

result from a careless watering of the pot. If the roots are rotting, the best thing to do would be to repot the plant at once into a much smaller pot, in sandy heath soil, and fibry sandy loam, and plunge it at once in a gentle, sweet bottom heat. If the roots were sound, all that would be required would be to shake part of the old soil away in March or so; repot in heath soil and loam; give a little bottom heat, if possible—or if not, hothouse-heat, at least, until the month of June, by which time you might expect the flowers to come with their delicious scent, and pure white colour at the points of the shoots. When done flowering, the plants should be kept in a high temperature, fully exposed to the sun, and a fair supply of water given for a month or so; and then water should be gradually withheld, that the shoots may be ripened thoroughly. Except when in bloom, and for the purpose of prolonging it, and when in a state of rest in winter, I consider that the plant will not succeed well in a common greenhouse.

HEDYCHIUM GARDNERIANUM.

"My master bought this under the impression that it is hardy. It is now four or five feet high. I think it requires heat."—You are so far correct; but yet it is hardier than the one mentioned above. The word "hardy" is a relative and comparative term. When no data of comparison are given to us, we associate the word "hardy," as respects a plant, with its powers to exist and thrive under the usual changes of our climate. Taking the word in this meaning, I would say decidedly that the plant is not hardy. I cannot vouch for the fact; but I think it is just possible, that in some sheltered nooks of Devonshire and Cornwall, and the south of Ireland, where a few degrees below the freezing-point are considered very severe—that the plant, if kept dry at the roots, might survive the winter, and throw up strong shoots in spring, which would bloom in the end of summer and the commencement of autumn. Even if this supposition were confirmed, the hardiness of the plant would be by no means proved as respects our general climate. One gentleman last season brought me a list of a number of Cannas he saw blooming out of doors in France. Another directed my attention to the somewhat-tropical aspect given to some of the flower-beds at the Crystal Palace, by having such large-leaved plants in their centre: and both contended that the plants must be hardy, or they would not be there. Now, with much more justice might we contend that the whole race of greenhouse and bedding plants are hardy. It is true that some plants prove exceptions to the rules we otherwise should have derived from the latitude and the position of their native habitats; and therefore it is well, for experiment, to leave out such plants as Hedychiums, Cannas, &c., to see what our winter will do for them. A gentleman from India once told me that he had seen masses of this Hedychium in great splendour, growing in rich alluvial soil—exposed to great heat and moisture at one season, and great heat and dryness at another. I believe these facts will furnish the key that will open the secret to its most successful culture. As far as I recollect, Mr. Beaton told us lately that this plant was flourishing, this winter, in the cool greenhouse conservatory end of the Crystal Palace, so far as the healthiness of the leaves was concerned. I presume, however, the plant was in the soil, or plunged, and not exposed in a pot. This makes a matter of considerable importance.

We have as yet had scarcely any winter. Such a house, moreover, encloses such a vast body of air, that it would be long before plants near the floor would be greatly cooled. I should be a little doubtful if such a plant, kept in the near neighbourhood of Rhododendrons, would have heat enough in summer to bloom and ripen its shoots sufficiently for another season; and, no doubt, our friend will be sure to inform us. Even if that should take place so as to surpass our expectations, I should be

doubtful if the plant would succeed equally well in a cool greenhouse in a pot all the year round. If the plant be proved hardy enough for the open air, or even for a cool greenhouse, no one will be more glad than the writer, as I have long felt a great interest in its golden orange-yellow spikes, or racemes of bloom, produced at the points of the shoots. The following is the hardest treatment I have succeeded with when the plant was grown in a pot:—

Soil, chiefly fibry loam; plant put into a forcing-house in March or April. When the young sucker-shoots appeared, plenty of water given. As they get from one to two feet in length, shorten first, and then cut away to the base the old shoots, giving all the strength to the young ones. Give them all the light possible by June or July; or earlier, if strong. When the flower begins to show at the point of the shoot, bring it still more into light and air; and as the florets begin to open, remove to the greenhouse, where the air admitted will not strike at once on the plant. Keep in this cool place as long as in bloom; full in the sun afterwards; and decrease the water as the autumn approaches. Any place where the temperature is not greatly below 45°, and comparative dryness at the roots, will do in winter; and that will just keep the leaves on the shoots alive, so as to keep up a languid action at the roots. These shoots bloom no more, or rarely; and therefore, after the young shoots or suckers appear, they must be sacrificed to give strength to this new growth. As your shoots are now four to five feet high, we cannot tell whether or not they might bloom this coming summer; but we are rather inclined to think they will not, and that you must wait for the young ones. There is no harm in giving them the encouragement of trying.

GINGER ROOTS (*Zingiber officinale*).

"Can I manage this at all, by means of a greenhouse, so as to have fresh roots for preserving?"—Decidedly not. I introduce this here, as belonging to the same natural group as *Hedychiums*, though the question comes from another correspondent. The roots, in winter, may be kept anywhere dry, where they will be free from frost. When started in spring, by the roots being divided into as many small pieces as they have buds, they must be excited into growth by heat; water freely given as the shoots lengthen and flourish; and the heat of a hotbed, or a plant stove, given until towards autumn; when, as the shoots begin to change from green, less and less water must be given until the shoots ripen; and shortly after, the roots will be fit for preserving, or for keeping dry over the winter, where no frost will reach them.

CELOSIA AUREA.

"Will this succeed under the same treatment as the common Cockscomb?"—Yes, and even with much less care. The crimson and the yellow Cockscomb, and other colours of the true Cockscomb, go generally under the common specific name of *cristata*. Florists throw away all Cockscombs that have not the true compact character. However beautiful are massive crimson or yellow Cockscombs, they are just too compact to be elegant. Almost every grower has thrown away hundreds, just because they assumed,—instead of the lumpy compact Cockscomb character,—the more spiry, airy, feathery appearance of a Prince's Feather. A yellow variety of these runaways, is, what I believe to be, what has lately been advertised as *Celosia aurea*. Mr. Thompson, when at Dyrham Park, used to grow them for summer and autumn greenhouse decoration. They took away the impression of sameness from flat-headed plants. Tastes are continually changing. To me there is something more elegant in a drooping Love-lies-bleeding, or a fine-branched Prince's Feather, than in a Cockscomb; but the lovers of fine-formed large Combs, would look upon me with feelings either of disdain or pity. Such spiry plants do not require such an

amount of heat in their earlier stages as the flat-headed Cockscombs. Light, rich, fibry soil will answer well.

SEEDS AND PLANTS FROM FLORIDA.

"A friend sent me, what he considered fine things, last season. The plants are, I fear, dead. The seedlings were raised in a Cucumber-frame, hardened off gradually, were placed in the summer in a cold pit, have since been kept in a greenhouse, from 40° to 45°; but they are nearly all dead, or looking ill. What has been wrong?"—Unless I know more, I shall be forced to lay the blame on not giving the plants heat enough, especially for the first year. I find, from a great many facts, that our enthusiastic friends are rather too anxious to get plants acclimated, without taking into consideration the circumstances in which the plants and seeds were placed before they received them. Now, so far as known to us, Florida is a rather low, moist country, not far removed from the tropics; and, from its peninsular position, exposed to nearly similar heats. Rain is plentiful, and almost continuous from June to October; and, at other times, the weather is rather open, and the sun powerful—so much so, that a Britainer finds its rays warm enough in winter. It is seldom that even the slightest frost is perceptible in winter. Supposing, then, that seedlings from such a place were raised in a hotbed, in March, I would have potted them off, and kept them in a hotbed, at least until July, giving plenty of heat and moisture. I would continue this, if I could, until August, and then give more air and direct sunshine. If I must place them in a cold pit in July, I would keep it like a hotbed, by keeping it close, with plenty of atmospheric moisture. By September, I would give more air, and free sunshine; and house them by the middle of October; and let them have an average night temperature, during winter, of from 45° to 50°, or a few degrees more. The second season, after a growing period in the spring, they might be hardened off earlier in the autumn; and then, very likely, they would stand a few degrees lower temperature in winter, uninjured.

MEDINILLA MAGNIFICA.

"One hundred seedlings, fifteen months old, grown in loam, sand, and bog, each in six-inch pots, about nine inches high, with six or seven shoots to each, fresh and green, kept from October in temperature ranging from 45° to 55°. When should they flower? Should I cut them down, and strike as recommended for old plants?"—I have had no experience with such seedlings. I should imagine that some of the strongest would bloom this summer, if much encouraged; and all would do so the following year, if encouraged to grow well this season, and well ripened in autumn, and pruned back in winter and spring. I should like to know how many of these bushy plants would blow this season.

CLIMBERS IN POTS.

"To cover two partitions that separate two vineeries from a plant stove. Pots to stand on top of flue in winter. Temperature in winter, about 40°?"—If the partition is glass, the covering it thickly with creepers will nullify to a great extent the use of the glass division. In such a case, creepers might be placed on the stove ends; and of these *Combretum purpureum* might be placed at the warmest end, and *Stephanotis floribunda* at the coolest. Supposing, however, that it is indispensable that the creepers should be on the viney side—whether the divisions are of glass, or opaque as brick, these divisions will obtain a certain amount of heat from the stove, and thus be warmer than the general temperature of the viney in winter. Many plants might be chosen for such a place; but looking to free growth, free blooming, and standing the heat of the viney in summer, I should prefer *Passiflora quadrangularis*, or *Buonapartea*, for the viney forced earlier; and *Passiflora kermesina*, for the one forced later. To cover the space

quickly, two plants of each might be had. But by the time the plants are in eighteen-inch pots, or boxes, one plant should be sufficient for a space fourteen feet by ten feet. The *kermesina* will want no other care than, when it is established, pruning back on the spur-pruning principle at the commencement of each winter. The other, in addition to that, would be the better for lessening water earlier in autumn, to retard and ripen growth then; and, in winter, to have the surface of the pot, or box, covered with dry moss, and the whole pot surrounded with a cloth, to keep the roots comfortable. If the house fell often below 40° in winter, the whole stem might also, after spur-pruning, be wrapped in a cloth, and kept there; or the whole plant might be moved when in this condition, and placed under the stage in a cold place in the plant stove. I have had both these large-flowering Passion-flowers, *quadrangularis* and *Buonapartei*, in fine order in a viney, whilst the roots were in a box in a cool stove, and a hole made in the partition for the stem to get through. I have also had the back of a viney covered with them, when forcing commenced in February; but though the house was frequently below 40° in winter, the roots were grown in a small brick pit, below the ground level. The reason, therefore, will be obvious, why, in the case of an exposed pot, I should recommend protecting it in winter. When the stems are a year or two old, and well hardened, they will stand a good degree of cold with impunity. The long summer shoots that produce the flowers, should be cut back to a bud or two every winter. Of course, with these summer blooming would be the chief thing: but as the stems would be leafless, or nearly so, in winter, other flowering plants might be placed against the partition at that time, and do no harm to the Passion-flowers.

CLERODENDRUM BUNGII AND SPLENDENS.

"Young plants, vigorous, not blooming. Bungii lost its leaves. Temperature since October from 50° to 55°. When cut down?"—Young plants require more heat than old ones. *Splendens* can scarcely have too much of it in summer, in unison with a moist atmosphere—lessening moisture as autumn approaches. Do not cut down: but as soon as you increase the heat to 60° and 70°, prune back the young shoots to two or three buds, and shorten the main shoot a little.

MANETTIA BICOLOR.

"When is it to be potted to have a good plant by August?"—As soon as you like, if you can give the plant more heat than a greenhouse. A slight bottom heat to start it will do it no harm. This extra heat and encouraging growth may be continued until the middle of June, when a good position in the greenhouse will suit it. We hardly expect, however, that even then the plant can be brought to its best in August, even though you begin to curtail water in July, to arrest growing and encourage blooming; as it is just as natural for this plant to bloom in the winter and spring months, as it is for a Snowdrop to bloom in February and March.

ALLAMANDA SCHOTTII.

"When is this cut down, so as to bloom in August?"—Merely shorten, or cut back, to within a few buds of the older wood, according to strength, a week before you can place the plants in a nice growing heat of from 65° to 70°; the sooner the better.

LESCHENAULTIA FORMOSA.

"Why are the tips of the shoots dying off at this season?"—Most probably owing to too much moisture at the roots in such dull weather, too low a temperature, and not a sufficiently active circulation of air. Light a fire in the daytime, and give more air.

AZALEA GLADSTANESII.

"How can I make a plant three feet high break from the stem?"—If healthy, give heat and moisture to make

it grow freely. Stop all the shoots already on the plant, to throw the vital energies into the stem. If you have a sweet hotbed, place the pot on a board on its broad side, and let the stem be supported six inches above the bed; and place a thin cloth over it, that the heat and moisture from the bed may act on the stem. If that does not cause buds to break there, I should imagine the case to be hopeless. Old plants of Azaleas, with their main stems and shoots hard and hide-bound, do not stand free cutting-in well.

R. FISH.

THE PELARGONIUM.

MR. CHARLES TURNER, of Slough, is undoubtedly the best grower of the Pelargonium at the present time; and, consequently, is a good judge of its culture. He says, "No flower is more easily cultivated than the Pelargonium; yet none is more generally mismanaged." His example, however, is beginning to have its effect, even in distant and divers parts of the kingdom. I frequently, in private gardens, meet with plants that would not disgrace the collection at Slough. In this paper I intend to give a list of the best approved new and older varieties; and previous to doing so, I shall give a few brief hints of the most important points of culture.

Cleanliness.—Like all other plants, the Pelargonium suffers from dust, effluvia from decaying leaves, dirty glass, and the green fly. These must all be avoided. If the leaves are foul from whatever cause, that foulness must be removed; dust and dirt must be washed off with a soft sponge; every decayed leaf instantly removed clean away out of the house; the glass must be kept clear of dust or green moss inside and out; the stage and floor frequently washed; the walls whitewashed at least once a-year; the pots, also, should be kept clear of green moss or any other dirt; and lastly, no weeds or moss should ever be seen on the soil. The insects should be kept under by frequent smokings of tobacco. Then all will be sweet; and the plants will be grateful for this attention, and keep in health all the time they are under glass.

Position.—One point in regard to position is, that, from a small plant to a large one, it must stand close to the glass; that is, as near as is consistent with space to allow for growth. Another point is, that the pots should stand at such a distance from each other, that the leaves do not touch: and lastly, if possible, the house should contain no other kind of plants. The great growers, such as Turner, Dobson, Gaines, Frazer, and others, even carry this point so far as to have separate houses for the large kinds and the fancy varieties. Let the young grower, however, not despair even if he have not such ample means. I always advise such to do as well as they can with the means at their command.

Air.—This health-giving indispensable element should be given at all times of the year, excepting in severe frost; and even then, if the sun shines bright, air must be given, taking care that the plants are not exposed to draughts of frosty air.

Water.—This is also an important element, which must be used properly, or evil results will follow. In autumn and winter, no more must be given than is sufficient to keep the leaves from flagging: but when spring arrives, and the plants are evidently growing, it should be used more freely. A gentle syringing in the evenings of warm days will assist to keep the leaves clean, and be of great advantage. As the season advances, a watering with diluted liquid manure, once or twice every week, will be of essential service; it will keep the old leaves in health a longer time.

Soil.—The top spit of an old pasture and hotbed dung, in equal parts, laid in a heap for a year, and frequently turned over during that time, will grow them well. Adding a small quantity of river, or silver, sand, to make it open and let the water through freely, will improve the compost.

Treatment before and whilst in bloom.—If the plants are intended for exhibition, the great point is, so to manage, that the plants should be in their best condition at the time. To accomplish this, no flowers should be allowed to open till about ten days before the day of exhibition. To retard the bloom, shade the house and keep it rather cool. If they are rather backward, then the obvious remedy is, to give a little more heat to bring them forward; but this must be very carefully attended to not to overdo it. When in bloom, they must be shaded, and plenty of air given to keep the flowers from spotting or falling, and to prolong the period of flowering.

Treatment after blooming.—Plants that are not too old, or too large, should (after the blooming season is over), be set out of doors for a short time, to harden the wood. If the weather should prove very wet, the plants should be protected from heavy rains; and water should be given in small quantities when no rain falls, in order to check growth and ripen the shoots. When the wood is well hardened, then cut the plants down pretty severely, leaving the branches so arranged as to form a good bushy plant the year following. After they are cut down, the plants should have no water, and should be exposed to the sun and the air. A cold frame, or pit, is a good position for them whilst in that state; but the lights should be drawn off every day, except during rain. The plants will push their fresh shoots in four or five weeks. They should then be shaken out of their pots, all the soil removed, and be repotted into small pots, placed under a frame, and kept close and shaded for a week. Then give a gentle watering, and gradually harden them to bear the open air. Should any shoots appear to take the lead, the tops of such should be nipped off, to check them and encourage the weak shoots to grow stronger.

Forming specimens.—Considerable art and constant attention are requisite, in order to produce handsomely formed plants. One great point is, not to *overpot* them. Large pots may produce large leafy plants, but they will not produce, when wanted, a blaze of bloom. The pots should be well filled with roots by the time the plants come into bloom. After winter is over, put them into their blooming pots, and shift no more till they are cut down.

The next point is, *the formation of the plant, so as to make a handsome bush.*—To do this perfectly, the training operation should commence whilst the plant is young. Supposing, then, it is a nice, young, healthy plant, with one stem; that stem should be stopped by nipping off the centre bud. It will send out three or four side-shoots. As soon as these will bear it, tie them out nearly horizontally, or flat across the pot at equal distances. This must be done carefully and by degrees, or they will slip off close to the main stem. When they have advanced a few inches in the new position, stop them again: each shoot will send forth two more. These should be tied out the same as the first. Most likely a shoot or two more will spring out near to the main stem. These should be stopped as soon as they have attained a few inches in height: the plant will then present the appearance of a specimen in embryo, and will soon require repotting. There are three ways of tying-out these shoots. The most common is that with short sticks; the second, with hooked pegs; and a third, by tying round the outside of the pot, close to the rim, a piece of string or mat, and tying the shoots down to it with other pieces of mat. I prefer the sticks myself, because they can be placed exactly where the shoot requires bending; but in careful hands, any of the three ways may be used. The string round the pot has the advantage of concealing the means by which the training is done. Very little care after this laying of the frame of the future specimen is needful. Keep the shoots equal in length on every side, and the centre shoots a little above those of the sides, and the specimen will be symmetrical; and when in bloom will look like a globe of flowers. Every season, as long as the plants continue in

health and manageable as to size, the cultivator will take care, when he cuts them down after the wood is hardened, that the branches forming the framework of the specimen are left so as to continue the shape of the plants.

TWELVE SELECTED NEW VARIETIES.

ARIEL (Fellowes').—Lower petals pure white; top petals dark, rich carmine spot, with a margin of pure white. A good grower, dwarf habit, and good substance. Has gained several prizes.

BRIDE, THE (Beck's).—Lower petals pure white, keeping the colour to the last; the upper petals have a large, rosy, carmine blotch, margined with white. Greatly admired wherever it has been exhibited.

BLINK BONNY (White's).—Bright crimson lower petals; black blotch on the upper petals, with scarlet margin. Good shape, excellent habit, and a free bloomer.

BRILLIANT (Foster's).—Scarlet. Lower petals medium sized; black blotch on the upper petals; margined with scarlet. The best of its class.

FIRE QUEEN (Foster's).—Fiery scarlet. Crimson lower petals; dark blotch, with crimson margin on the upper petal. A rich bright variety.

LADY CANNING (Hoyle's).—A large rose-coloured flower. Dark spot on the upper petals shaded with scarlet, and a broad margin of rose. This will be a favourite from its pleasing colour.

LEVIATHAN (Hoyle's).—Lower petals rich purple; upper petals dark blotch, with broad margin of purple. Good form and substance. Distinct and novel.

MRS. ELLIKE (Laing's).—A spotted variety. Lower petals bright rose, with deep crimson spots; upper petals blotched with maroon. Good shape; stiff petals. A fine, distinct variety.

PRINCE OF WALES (Hoyle's).—Tinted rose. Lower petals dark maroon blotch, with a narrow margin of rose on the upper petals. A fine, well-shaped variety.

SPOTTED PET (Dobson's).—Lilac, with maroon spots on the lower petals; dark spots on the upper petals, shading off to lilac. Distinct and novel.

RINGLEADER (Dobson's).—Pale rose. Lower petals white eye; upper petals blotched with maroon, shading to pale rose. A large, bold flower, quite distinct.

PEACOCK (Turner's).—A rose-coloured flower, with dark maroon spots on each petal; white centre. A large, bold, gay flower, striking and effective.

Twenty-one shillings each.

EIGHTEEN SELECTED OLDER VARIETIES.

These are all distinct, finely coloured, and of good form.

Aurelia	Eclipse	Mazeppa
Ardens	Fancy	Meteor
Admirable	Fairest of the Fair	Mr. Hoyle
Bellona	Gem of the West	Mr. Marnock
Charmer	Governor General	Queen of Beauties
Conqueror	General Williams	Rosalie

SIX SELECTED NEW FANCY PELARGONIUMS.

BEAUTY.—Bright rosy lake; white throat, and white margin. Distinct, novel, and fine.

CAPTIVATOR.—Violet crimson, with light throat and edges. Bright and showy.

FORMOSUM.—White centre; top petals violet maroon; lower petals white, mottled with lilac.

MARCHIONESS OF TWEEDALE.—Bright crimson, shaded with violet; white eye and margin. An excellent variety, and a good grower.

MODESTUM.—White, with bright rosy spots; lower petals mottled with silvery rose. A delicate, distinct, novel variety.

NEGRO.—The darkest variety known, being nearly black; white throat and margin. A well-contrasted, striking variety.

TWELVE SELECTED OLDER VARIETIES.

Acme	Helen Faucit	Mrs. Colman
Bridesmaid	Madame Rougière	Princess Royal
Carminatum	Moonlight	Rosabella
Claudiana	Mrs. Turner	Sir Joseph Paxton

These twelve are all distinct and good kinds. I can confidently recommend them. All the fancy varieties seem to have fallen into Mr. Turner's possession. He has either raised them himself, or bought the stock from the raiser.

FRENCH VARIETIES.

These are in great esteem for decorative purposes; their bright attractive colours and profusion of bloom render them especial favourites. I have seen the following in flower, and have selected them out of a great number as being the best of the class.

Belle Esquiermoise	Modèle	Pescatorie
Charles Turner	Madame Boucharet	Roi des Feux
Comte de Morny	Madame Rendatler	Paul et Virginie
L'Immortelle	Madame Pescatore	Virginie Meillez
Louise Miellez	Médaille d'Or	Vulcan
	William Bull	T. APPLEBY.

BRITISH POMOLOGICAL SOCIETY.

(Continued from page 327.)

GRAPES.—Mr. THOMPSON (gardener to the Duke of Buccleugh), Dalkeith Palace, Edinburgh, sent a dish of LADY DOWNE's SEEDLING, a variety not much known, but considered by the Meeting to be worthy of more extended cultivation. It is evidently of the *St. Peter's* section. Bunch about eight inches long, shouldered; appears to be a very fine settler, and to require much thinning; berry medium-sized, nearly round; skin moderately thick; flesh very juicy, sweet, and vinous. Mr. Thompson reported, that the bunch sent, which did not exhibit the slightest appearance of long keeping, by loss of bloom, or shrivelling in either berry or stalk, "was ripe in August last," and adds, that "he finds no Grape hangs so long and combines so many good qualities."

Messrs. WEBBER and Co., of Covent Garden, exhibited good examples of retarded BLACK HAMBURGH, which had been ripe since September last; the berries of which were still plump, although their stalks gave evidence of the long time they had been kept.

SEEDLING APPLES.—Mr. G. WOLSEY, of St. Andrew's, Guernsey, again sent specimens of his SEEDLING, regretting that, as the last of the crop, they were poor examples. Though past its best, it was considered to have maintained the opinion formerly expressed regarding it; its general character approaching that of the *Golden Harvey*. Mr. Wolsey reports, that the original tree is twenty years old, moderate in habit of growth, shape of head rather globose, and thinks it will prove a good dwarf prolific kind for small gardens.

JOHN FERME, Esq., of Haddington, N.B., sent a SEEDLING, somewhat resembling the above, said to have been first noticed thirty years ago, when it had sprung up between a *Nonpareil* and *Golden Pippin*; its blossoms, leaves, and wood are said to resemble the former; and the fruit also gives greater evidence of this than of the latter affinity. It was not deemed in a fit state for opinion to be passed on it, being much shrivelled, probably from having been gathered prematurely.

Mr. THOMAS OXLEY (gardener to Miss Sitwell), Spondon, near Derby, sent a Seedling, called PRETTY APPLE, apparently possessing the properties of a good late Kitchen Apple, being large, small cored, and acid. Reported also to be a great bearer, of healthy constitution, and compact habit. (On being baked without sugar, they were found to be pale brown in colour; tender, but not breaking into pulp; not syrupy; sweetish subacid in taste. The fruit, however, had been gathered before they were ripe, as stated by the sender, and were not in condition.—SEC.) It is requested that the kind be sent again next season.

Dr. DAVIES, of Pershore, brought again his Seedling, TALIESSIN (reported on last year); and promised again to send a bundle of scions for distribution.

Mr. DOWLING, of Southampton, sent a single specimen of a SEEDLING, said to be raised from *London Pippin*, which, it is requested, may be sent again next year, in large quantity, that its merits may be fairly tested.

Mr. ROBERT ANNANDALE (gardener to J. R. S. Carnegie, Esq., Seaton House, Forfar, sent a SEEDLING, raised by

Mr. JOHN GOWANS, market-gardener, Arbroath. This was considered a very fine and promising late Kitchen Apple. Sound, acid, and heavy, much resembling *Minchall Crab*. Mr. Annandale is requested to send it again to the next Meeting, and, if possible, with the variety referred to from the same district.

APPLES.—Dr. DAVIES brought FLANDERS PIPPIN, or *Mère de Ménage*, considered in Worcestershire the best of all Apples for culinary purposes. Also, a sort very nearly resembling it in appearance, but more rubicund and solid, and reported to be more upright in habit, called SCARLET FLANDERS. Dr. Davies has promised to send, for distribution, scions of both these kinds. DE NEIGE, under the name of *Porter*, by which he received it from America.

Mr. HENRY CURTIS, of Ashburton, Devon, sent GRISE, or *Pomme Grise*, under the name of *Cinnamon Russet*.

Mr. G. WOLSEY again sent POMME DE CIRE, still apparently in excellent condition (but when boiled, found to have lost much of its briskness of flavour, tending to prove that its season is past.—SEC.)—GROS LIMON, or *Gras Limon* (when baked, pale-fleshed, not pulpy, but tender, sweet, and very syrupy.—SEC.) and MAIGRE LIMON, recognised as one of the most favourite varieties for roasting, or using as a *Beaufin*, in Worcestershire, where it is known as *Oaken Peg*.

CULTURE OF THE YEW.

I SAW and read with much pleasure your opinion on the invigoration of old Yew trees: what you said of those that are growing in the nursery of Mr. Cutbush was very gratifying even to me, and I think that a few more remarks on the Yew tree would not be altogether disagreeable to most of the readers of THE COTTAGE GARDENER.

If we look back, we find it amongst the very earliest evergreen trees that were used either as ornamental trees or for any other purpose. We are always in want of it at our greatest holiday in the year, to intermingle with other evergreens, to decorate our cottages as well as noble halls; public places of worship, as well as public places of amusement. It also bears many company after that, when they are planted beneath its shade. But now it is considered, by a very great number of practical gardeners, not to be a good ornamental tree or shrub, fitted for a shrubbery. They say it will do very well for churchyards, or to plant at the back of the shrubbery, to hide those buildings which are at a distance that are disagreeable to the eye. But I must say Yews deserve a prominent place in all shrubberies, as well as being planted out as single specimen trees. If Mr. Appleby had seen some good-grown specimens, they would not have been excluded from his new and scientific arrangement of hardy shrubs.

To grow good specimens of the Yew, they must be attended to when young, and not allowed to grow on in their wild state for years; and then, with a large pair of shears or a reaping-hook, to be shaved or cut into all those fantastical shapes that generations long gone by used to admire and delight in.

In the first place, you must never allow more than one leader. When quite young, you must take all the side branches in close to the stem, and continue to do so till they are four feet high; which height they will not be very long in attaining. Then is the time to let them go on to any desired shape. At about the time they are from sixteen to twenty years of age, and on to double that period, if managed judiciously, they appear almost as ornamental as any of our Conifers, and having the advantage over those through bearing the knife so well. You can have their fine cone shapes or pyramids just to your own fancy without the use of the shears or clipping-scissors, which destroys that gracefulness which Nature has imparted to them in its own unerring way.

If inserted in shrubberies grown in this way, they will appear bold, majestic specimens of a much-neglected—I might say, almost-castaside ornamental tree or shrub.

It is a tree, also, that is so easily propagated, that they ought to be found in every shrubbery where there are from ten to twenty shrubs used. There is no trouble for gardeners in the propagation of this tree; for if there is an old one near when the seed is ripe, those little warblers that seem to enchant us to the

spot by their sharp, but still, soft, musical notes—it is they that sow the seed under almost every tree that is near; so that we are not in want of young ones, if we like to take care of them afterwards. I have seen as many as ten in one square foot of ground, from one to three inches in height.

Perhaps your readers—or some of them, at least—would like to know where they can see some good specimens. I will tell them where they may be seen. Many have looked at them from a distance, and said they never saw such a beautiful lot of Irish Yews before, and ask how they are managed: it seems almost incredible to them after they are told they are the common Yew trees.

They are at the west end of the county of Wilts; and are about seven miles east-by-south-east of that ancient resort of fashion—Bath, as travellers leave that noble city, and travel up that delightful valley where nature seems to have scattered its enchantments for the eye in a most unlimited manner, on the Wilts, Weymouth, and Somerset branch of the Great Western line. Travellers are exactly opposite to them as they stop at that picturesque little village-station, Freshford. They are about a quarter of a mile on the opposite side of the river Avon, which winds its circuitous course close in under the hill where those trees are now growing. There are five or six old ones, from which all the others sprang. The trunk of one of them is two feet through at the base, with a clean straight body for some feet; the head and foliage of which cover upwards of eighty square yards of land. No one in the neighbourhood seems to know when or by whom they were planted; for, where they are all growing now, was, about thirty years ago, one of the wildest and most uncultivated spots in our island.

There are some good specimens of different shapes, showing what cultivation will do for them. There are, I might say, thousands there from three inches to twenty feet in height, and in the stem from the size of a wheat-straw to that of a man's arm. The Irish Yew would not have much chance against some of these. Fancy one of them from sixteen to twenty feet in height, and as straight in comparison as the barrel of a gun, not having the least stiffness in any one way about it. The birds have dropped the seeds in bygone years amongst the Fir plantations and pieces of coppice wood; so that they are now trying to cope with the Fir trees and coppice wood—and they seem to be doing quite as well there as where they are fully exposed to sun and air. They are a mass of dark-green foliage from the surface of the ground to their tops, as well where they are shaded, as in exposed situations.

I have heard ladies remark, when walking through the woods, what splendid bows they would make for their summer archery fêtes. Some of them have been turned into such weapons; and there might be thousands grown in woods where nothing, seemingly, but those and the Briar will grow. If a visit were paid to that part of the country, they would well pay the visitor for his trouble, if Yew trees were the only things to be seen: but they are not, for there is some of the richest landscape scenery around there that little England affords. And that is not all; for there are between twenty and thirty acres of land planted with several kinds of choice fruit. The kinds, and the treatment that they have had, I will speak of at some future time.—J. ASHMAN.

[We shall be glad to receive your notes on the Wilts fruit culture.—EDS.]

CALCEOLARIA CULTURE.

I HAVE hastily enumerated a few of the grievances of which I think the Calceolaria has just cause to complain.

In how many places do we find the stock of cuttings in 32-sized pots and pans crammed in the end of some pit near a flue, the heat of which, upon frosty nights, where they stand, ranging from 70° to 90°? How often do we see them drooping, nay, shrivelling, for want of water? How very often are we, in our visits, eye-witnesses of the dark spots upon the leaf of deformed shoots, and of sapless growth, caused by the ravages of those executioners—the green fly, thrips, &c.? These are but a few of the more-readily-perceived grievances: were I to continue to enumerate, I should with them alone fill a column.

The best way to strike and grow the Calceolaria which I have yet seen, is the following:—Fill 24-sized pots with cuttings; pots well drained, and the soil not too rich; putting the cuttings in as late as possible in the autumn; keeping them until December entirely in the shade, in an old frame. About the beginning of December placing the frame full in the sun; putting it on the

ground, with a few ashes, with slates laid over them; and if frost sets in, pack the frame round the outside well with leaves. If a little heat arises, it warms and dries the frame inside.

They will do tolerably well, as before described in THE COTTAGE GARDENER, by setting the cuttings in rows, in a frame with soil therein, alone. But the advantages of the above over that mode is, you can store more cuttings in less space, can pick and clean them easier; and, more particularly, can give them a nice fresh invigorating watering occasionally.

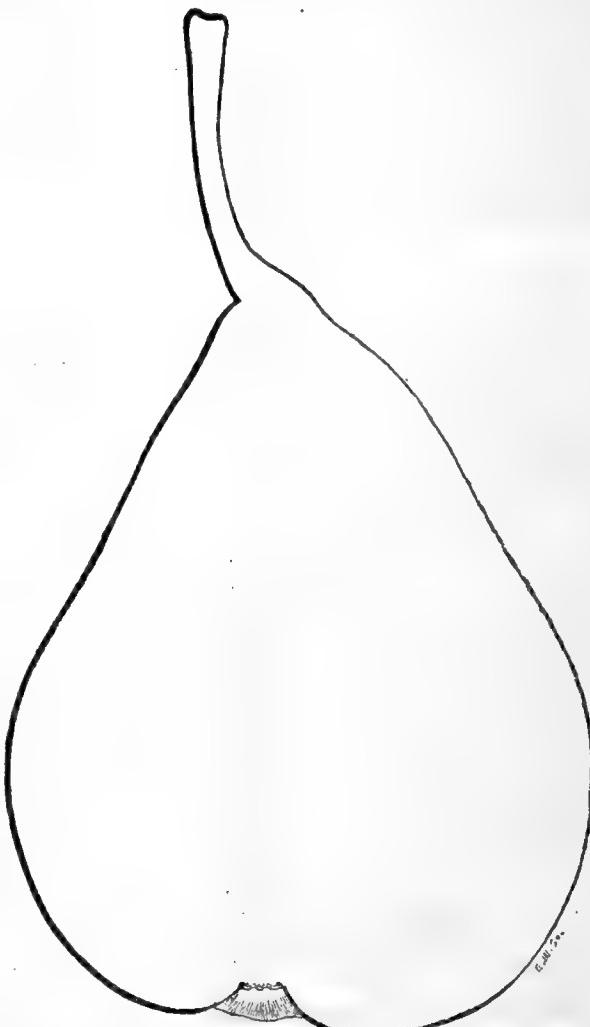
I believe the real requirement of the Calceolaria is to be kept cool, with adequate moisture and fresh air through the winter. I would also recommend not to strike the cuttings, neither to pot them off in soil much more fertile than that in which they are going to make their whole summer's growth.—N. N. E., *Digs-well House.*

FRUITS AND FRUIT TREES OF GREAT BRITAIN.

(Continued from page 134.)

No. XIV.—L'INCONNUE PEAR.

AT this season of the year, even the best winter pears begin to assume a condition anything but inviting; and the more we can increase their number, the greater will our chances of securing a continued supply be increased. It is in winter pears of first-rate quality that our collections are most in need; for after Winter Nelis has passed,—which it generally is in January,—we have nothing of any approved merit, except Beurré de Rance, the Ne plus Meuris, and Easter Beurré; the last always uncertain. It is, therefore, gratifying to be able to speak of one which we think should be added to the list of planters who desire a good supply of late winter fruit. *L'Inconnue* is not a new pear, as will be seen from Mr. Rivers' account of it given below; but it is one of which too little is known, and about which too little stir has been made.



Fruit slightly fragrant when ripe; rather large, and pyriform; rounded from the bulge to the apex, and tapers towards the

stalk. The bulge (widest part) is situated at two-thirds the length of the fruit from the stalk.

Skin rather coarse, grass-green at first, but assuming a yellowish tinge as it ripens, and sometimes becoming of a dull citron yellow, covered with rather large grey dots, and marked with considerable patches of cinnamon-coloured russet.

Eye small, and very frequently deciduous, like that of Beurré d'Aremberg, situated in a pretty deep basin, which is somewhat angular.

Stalk from an inch to an inch and a quarter long, slender, curved, and woody; attached to the fruit without depression, and tapering into the surface.

Flesh with a yellowish tinge, with somewhat of the texture of Passe Colmar and Beurré de Rance; very juicy, quite rich and sugary, with a well-marked and very agreeable aroma.

This most excellent pear, a seedling of Dr. Van Mons, cannot fail, when sufficiently known, to become one of the leading winter varieties. We have been favoured by Mr. Rivers with the following sketch of its history:—

"Some twenty-five or thirty years since, I received a batch of pear-grafts from the late M. Van Mons. Many of these were the kinds then beginning to become popular—such as Passe Colmar, Beurré Diel, and others; but among them were several with labels attached with no names, but numbers on them,—referring, I suppose, to his private catalogue. These, in due season, bore fruit; but, the numbers not being thought of any consequence, were lost,—the sorts being placed in the nursery catalogue here under numbers: thus—'175,' *Inconnue* (Van Mons), '176,' *Iconnue* (Van Mons), and so on; for I hoped one day to identify them by comparing them with kinds received from Belgium under names. This, with the above Pear, I have never been able to do, although I have received hundreds of varieties of them. It may now, I think, have the article attached to it, and 'The Unknown,' be its permanent name. It is of the Beurré Rance race, and has the same dark-spotted shoots, but is much more rigid in its growth; and, unlike that sort, it grows freely on the quince, without being double-worked. It is one of the hardiest varieties we have, and bears often too freely as a pyramid on the quince, so that the fruit requires severe thinning. For many years it has been very constant in ripening in February, and is generally remarkably juicy and melting, with a rich saccharine flavour. Sometimes I have thought its flavour melon-like, particularly after warm seasons. In February, 1858, it was very excellent, and is so now, so that a warm climate evidently suits it well."

SOWING AND PLANTING IN TURF.

THE mode of using turf for these purposes was first introduced by the late Mr. Bissett, Gardener, Methow Castle, Perthshire; who, after several successful trials, sent a report of his method to the Horticultural Society, Edinburgh, which was by them highly appreciated: and being the exponent in this instance of the originator's system, I shall briefly give an outline of the manner adopted by him in growing Peas, &c.

The turf should be cut from rich meadow-land (as tough as possible), seven inches wide, two deep, and as long as convenient, for placing on slates or boards, so as they can be easily moved from place to place. Cut two drills in the turf, two inches wide and one deep. Sow the seed, and cover with sifted soil. The turves must then be placed in a moderate temperature—say 50°—as near the glass as possible. When the Peas are six or eight inches high, gradually harden off; remove, and plant along a south border (taking care to shift the slates without breaking the turf), and protect from severe weather with spruce bows. By this method Peas can be gathered a fortnight earlier than by the usual way. *Early Frame* or *Charlton* is the best for this purpose.

With equal success annuals can be sown on turf for early summer sorts. The turf should be laid grass-side downwards in a frame, with a moderate heat. Make the surface somewhat rough with the rake. Sow, and cover slightly with fine soil. As soon as the plants make their appearance, give a liberal amount of air; and for a week before planting out, let them be fully exposed. When being planted, the turf can be cut into different sizes without injury to the plants.

Bedding plants, at this season of the year, may also be planted in turf with advantage; such as Verbenas, Lobelias, Petunias, Cupheas, Konigas, and others of similar growth. Turf prepared as recommended for Peas will suit this purpose well. In the drills set the plants a few inches apart out of their cutting-

pots; and fill up with a mixture of loam, leaf mould, and sand; and place in heat until they make fresh roots.

I do not mean to affirm that turf is better than pots for bedding plants; but where there is a scarcity of the latter, the former can be used as an excellent substitute.—A YOUNG SUBSCRIBER.

THE TASMANIAN HIVE.

A "DEVONSHIRE BEE-KEEPER" is, no doubt, right, touching the superiority of wood to zinc for the partition of my hive: indeed, I must confess that I have never employed the latter; but, if I did so, I should obviate the evil effects of which he speaks, by filling up the vacant chambers to the right or left of the "partition" with tow or wool, or some other non-conducting material.

Also, I am bound to confess, that all my own hives of this description were *without* hinges, and that I used to slide the top boards in the way described. Nevertheless, I think the hinges would not be found to destroy life in the hands of a skilful manager; yet I question if I should ever use them.

With regard to the dimensions of the hive, I would say, let every one suit his own fancy, or the requirements of his apiary. I am, however, as strenuous an advocate as ever I was for the use of large hives, peopled with strong swarms. Small hives and small swarms ought never to be; therefore, I would not diminish the central chamber.—B. & W.

FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 328.)

GOOSEBERRIES.

Those varieties marked L.P. are of very large size, and are known as "Lancashire Prize Gooseberries." For the whole of these descriptions I am indebted to the Horticultural Society's Catalogue, as I have had no opportunity of personally examining this portion of the fruits of Great Britain.

ABRAHAM NEWLAND (Jackson's), L.P.—Large and oblong. Skin white and hairy. Highly flavoured and excellent. Bush erect.

AMBER (*Yellow Amber*; *Smooth Amber*).—Medium sized, roundish. Skin smooth, greenish yellow. Of good flavour, but not first-rate. Bush a good bearer; spreading.

Aston. See *Red Warrington*.

Aston Seedling. See *Red Warrington*.

ATLAS (Brundrett's), L.P.—Large, oblong. Skin red, hairy. Of good flavour, but not first-rate. Bush erect.

BEAUTY OF ENGLAND (Hamlet's), L.P.—Large and oblong. Skin red, hairy. Of good flavour. Bush spreading. Belmont's Green. See *Green Walnut*.

BONNY LASS (Capper's), L.P.—Large, oblong. Skin white and hairy. Of second-rate quality. Bush spreading.

BRIGHT VENUS (Taylor's), L.P.—Medium sized, obovate. Skin slightly hairy, white, and covered with a bloom when it hangs long. Sugary, rich, and excellent, and hangs till it shrivels. Bush rather erect, and a good bearer.

British Prince. See *Prince Regent* (Boardman's).

CHAMPAGNE, RED (Dr. Davies' Upright; Countess of Errol).—Rather small and oblong, tapering a little towards the stalk. Skin rather thick, light red, and hairy. Early. One of the richest flavoured of all the gooseberries; vinous, and very sweet. Bush very erect, and an excellent bearer. This is frequently, and in Scotland particularly, called "the Ironmonger."

CHESHIRE LASS (Saunders'), L.P.—Large and oblong. Skin very thin, downy, and white. Flavour rich and sweet. Bush erect, and a good bearer. Excellent for tarts, on account of its early attaining a size for that purpose.

CROWN BOB (Melling's), L.P.—Very large and oblong. Skin thin, hairy, bright red, with a greenish tinge toward the stalk. Of good flavour, and a first-rate variety. Bush pendulous, and an abundant bearer.

CRYSTAL.—Small and roundish. Skin thick, smooth, or very slightly downy, and white. Of good flavour, and chiefly valuable for coming in late. Bush spreading, and rather pendulous; leaves not hairy above.

Dr. Davies' Upright. See *Red Champagne*.

Double Bearing. See *Red Walnut* (Eckersley's).

DUCK WING (Buerdill's), L.P.—Large and obovate. Skin yellow, and smooth. A late variety, and only of second-rate quality. Bush erect.

EARLY BLACK.—Medium sized, oblong. Skin dark red, and hairy. A second-rate variety. Bush pendulous.

EARLY ROUGH RED.—Small, roundish-oblong. Skin red, and hairy. A well-flavoured variety, but not first-rate. Bush spreading.

EARLY SULPHUR (*Golden Ball*; *Golden Bull*; *Moss's Seedling*).—Medium sized, roundish-oblong. Skin yellow, and hairy. Of second-rate quality. Bush erect, very early, and a great bearer; leaves downy.

EARLY WHITE.—Medium sized, roundish-oblong. Skin thin, transparent, yellowish white, and slightly downy. Very sweet, good, and early. A first-rate variety. Bush spreading and erect; an excellent bearer.

EMPEROR NAPOLÉON (Rival's), L.P.—Large and obovate. Skin red, and smooth. A second-rate variety. Bush pendulous, and a good bearer.

FARMER'S GLORY (Berry's), L.P.—Very large and obovate. Skin thick, downy, and dark red, with a mixture of green. A first-rate variety, and of excellent flavour. Bush pendulous, and an abundant bearer.

FAVOURITE (Bates').—Medium sized, oblong. Skin smooth, and green. Flavour second-rate. Bush pendulous.

GLENTON GREEN (*York Seedling*).—Medium sized, oblong, narrowest at the base. Skin rather thick, very hairy, green, and with whitish veins. Of a sweet and an excellent flavour. Bush pendulous, and an excellent bearer. Young shoots downy, and sprinkled near the base with small prickles. Leaves downy above.

GLORY OF KINGSTON.—Medium sized, roundish. Skin smooth, and green. Not highly flavoured. Bush spreading, and a bad bearer.

GLORY OF RATCLIFF (Allen's).—Medium sized, oblong. Skin thick, quite smooth, and light green. Of excellent flavour, and sweet. Bush spreading and somewhat pendulous, and a good bearer.

Golden Ball. See *Early Sulphur*.

Golden Bull. See *Early Sulphur*.

GOLDEN DROP (*Golden Lemon*).—Medium sized, roundish. Skin downy, and yellow. Of second-rate quality. Bush erect.

GOLDEN FLEECE (Part's), L.P.—Very large, oval. Skin yellow, and hairy. Of first-rate quality.

GOLDEN GOURD (Hill's), L.P.—Very large and oblong. Skin greenish yellow, and hairy. Of second-rate quality. Bush pendulous.

Golden Lemon. See *Golden Drop*.

GOVERNESS (Bratherton's), L.P.—Large, roundish-oblong. Skin greenish white, and hairy. Of second-rate quality. Bush spreading.

GREEN GAGE (Horsefield's), L.P.—Large and roundish. Skin green and smooth. Flavour only third-rate. Bush spreading.

GREEN GASCOIGNE (*Early Green*; *Early Green Hairy*).—Small and round. Skin thin, dark green, and hairy.

Very early, and sweet. Bush very erect, and an excellent bearer.

Green Laurel. See *Laurel*.

GREEN WALNUT (*Belmont Green*; *Smooth Green*; *Nonpareil*).—Fruit medium sized, obovate. Skin very thin, dark green, and smooth. An early variety, of excellent flavour. Bush with long-spreading shoots; leaves close to the branches; and a great bearer.

Green Willow. See *Laurel*.

Grundy's Lady Lilford. See *Whitesmith* (Woodward's).

Hairy Amber. See *Yellow Champagne*.

Hairy Black. See *Ironmonger*.

(To be continued.)

THE SCIENCE OF GARDENING.

(Continued from page 330.)

THAT the atmospheric air is that mixture of oxygen and nitrogen gases which is most favourable to the due progress of germination, is proved by the experiments of M. Saussure; for he found that seeds, germinating in it, always absorbed a portion of the nitrogen, but which they did not do, if the proportion of oxygen was increased.

These facts hold out some beacons worthy of being attended to, as guides for the operation of sowing. They point out that every kind of seed has a particular depth below the surface, at which it germinates most vigorously, as securing to it the most appropriate degree of moisture, of oxygen gas, and of warmth. From a quarter of an inch to two inches beneath the surface, appear to be the limits for the seeds of plants usually the objects of cultivation; these, however, must vary, for the same seeds in different grounds and countries. It must be the least, in aluminous soils and dry climates. In general, sowing should be performed in dry weather, especially on heavy soils, not only because of the greater saving of labour, but because it prevents the seed being enveloped with a coat of earth, impermeable by the air, "which," says Sir H. Davy, "is one cause of the unproductiveness of cold, clayey soils." Perhaps the time at which any ground may be raked with the greatest facility, is as good a practical criterion as any, to judge when it is most fit for sowing. In general, if clay does not predominate in its constitution, a soil rakes best just after it has been turned up with the spade. If clay does predominate, it usually rakes with most facility after it has been dug two or three days, and then immediately after a gentle rain. But it is certain, that the sooner seed is sown after the soil is dug for its reception, the earlier it germinates. In the droughts of summer, water is often required to newly-sown beds. Such application must not be very limited or transitory; for, if the soil is only moistened at the immediate time of sowing, it induces the projection of the rootlet, which, in very parching weather, and in clayey caking soil, we have known wither away, and the crop consequently lost from the want of a continued supply of moisture.

THE ROOT.

The root is present in all cultivated plants. The truffle, which, however, can scarcely be considered as belonging to cultivated vegetables, having hitherto defied all attempts to subjugate it, may be considered as consisting of nothing but root.*

A root is annual, biennial, or perennial. In the two former instances, if the individuals to which they belong, be allowed to perfect their seed, no care can protract their existence beyond the ensuing winter, however genial the temperature, and other circumstances, in which they are made to vegetate; but, if the ripening of seed be prevented, it is undetermined how long, in most instances, they may be sustained in life. We have known Mignonette continued in healthy vegetation for four years by this precaution.

In all roots, and under any mode of management, the fibrous parts (radiculae), are strictly annual; they decay as winter approaches, and are produced with the returning vigour of their parent in the spring. Hence the reason that plants are transplanted with most success during the season of the decay of those root-fibres: for, as the root almost exclusively imbibes nourishment by the mouths of these fibres, in proportion as they are

* In Prussia, it is said, the gardeners succeed in cultivating this subterraneous fungus; but their mode of treatment is a secret.

injured by the removal so is the plant deprived of the means of support; and if the removal be in the spring, or summer, the deprivation is at a time when all those fibres are most needed; and the sap which is employed in the formation of new fibres, would have served to increase the size of other parts.

The quantity of root we have always observed to increase with the poverty of the soil in which it is growing. Duhamel found the roots of some young Oaks, in a poor soil, to be nearly four feet long, though the stem was not more than six inches. Every one may have noticed this familiarly instanced in *Poa annua*, the grass most commonly growing on a gravel walk, its stem minute, its root a mass of widely-extending fibres. The cause of this is evident: the nourishment which is required for the growth of the plant, can only be obtained by an increased, widely-extending surface of root, and, to form this, more sap is often required than the plant, owing to the poverty of the earth, can obtain for itself; in that case, a soil is sterile, for the plant must evidently perish.

A root always proceeds in that direction where food is most abundant; and, from knowledge of this fact, we should be circumspect in our mode of applying manures, according to the crop and object we have in view. We know a soil which, being shallow, never produced a Carrot, or a Parsnip, of any size; but almost every root consisted of numerous forks thickly coated with fibres. Digging two spades deep produced no material advantage, the gardener applying, as usual, manure to the surface; but, by trenching as before, and turning in a small quantity of manure at the bottom, the roots always spindled well, grew clean, and had few lateral fibres. For late crops of Peas, which mildew chiefly from a deficiency of moisture to the root, it is an object to keep their radiculae near the surface, for the sake of the light depositions of moisture incident to their season of growth; hence it will always be found of benefit to cover the earth over the roots with a little well-rotted dung, and to point it in lightly.

If it be desirable to prevent the roots of any plant travelling in a certain direction, the soil on that side should be excavated, and the cavity refilled with sand or some other unfertile earth; whilst the soil on those sides of the plant whither the roots are desired to tend should be made as fertile as is permissible with its habits.

To keep the roots of trees near the surface, gardeners make an impervious substratum beneath their borders, either by ramming a bed of chalk at the requisite distance from the surface, or by placing there an asphaltic mixture of hot coal tar and lime rubbish. Roots coming in contact with these do not turn aside, but immediately cease extending in length, and produce laterals.—J.

(To be continued.)

BEES SECRETING WAX—HEXAGONAL CELLS —HUBER AND HUISH.

"*Floriferis, ut apes, in saltibus omnia libant, omnia nos.*"

"As bees in forests suck from every flower,
So we poor mortals vary every hour."

I AGREE most cordially with what is stated in No. 537 of THE COTTAGE GARDENER on this subject by a "DEVONSHIRE BEEKEEPER," and also by "B. & W.;" and although Mr. Wighton is a powerful writer, he is certainly a bold man to oppose such an accurate observer as Huber was.

Respecting the "resinous" substance collected from the Laurels and Firs, it is only to scrape off the substance which fixes the hives of bees to the boards, and put this substance to our nose, to be informed that these wonderful insects search for other substances besides real wax for some of their curious operations; and hence Mr. Wighton, or any other intelligent writer, may raise another question—How this substance, of a different smell and harder consistence, is secreted or collected? Really there might be no end of arguing these points.

I read Huber's book nearly fifty years ago, and was much delighted. There is a grand simplicity in his work, and I believe nearly all he has advanced: but in some little things, of minor consequence, he is in error—where he says that hive bees attack the "nests" of humble bees (on which latter he has written also).

Dr. Bevan, one of the best modern writers (living near Hereford still, and nearly one hundred years old), quotes Huber as an authority on this subject. I have studied the history and haunts of wild bees since I was a boy, and have taken their nests from time to time ever since, and am certain that the charge is untrue.

I can only account for this idea of Huber by supposing that our late interesting friend, M. Huber, left some of the wild bees' nests which he had taken from the earth, and placed them in an exposed state in his garden, with some wild honey in the cells. This may have attracted some hive bees to it, as sweets always will; but in the natural state of the wild bees this is never the case.

While on this subject, I regret to observe another writer, whom I considered a practical man with hive bees, asserting his disbelief in the hexagonal shape of the workers' cells. Surely there is no one thing in the history of the hive bees which shows the finger of Divine Providence more than in the formation of these cells. The economy of space and symmetry displayed here, mark the All-wise Author to perfection.

Mr. Huish—whose work also came out some forty years ago—boldly repudiates the connection between the queen bee and drone, and flatly contradicts the "Immortal Huber." I am surprised that no one has taken up this (Huish's), theory again, in these "enlightened" days of "universal discussion."

Mr. Huish boasts of his destruction of every poor unfortunate humble bee and their nests wherever he can find them, denouncing these poor harmless insects as enemies of the hive bee! One of his reasons being, that they (the humble bees), usurp the flowers and blossoms. Now, I could prove that the majority of the "Bombi" feed on the larger flowers, such as the Foxglove, the Nettle, and a numerous variety of wild flowers peculiar to their own taste; and the only two species, the *Bombus terrestris* and *Bombus lucorum*, that are sharers in the same pasture as the hive bees—another proof, if any were wanting, how every creature living is provided with its own particular food by the great Creator of all things.—H. W. NEWMAN, Lieut.-Col., R.S.G.M.

ORCHIDS FLOWERING BETWEEN NOVEMBER AND END OF FEBRUARY.

<i>Angraecum caudatum</i>	<i>Laelia albida</i>
" <i>bilobum</i>	" <i>autumnalis</i>
" <i>eburneum</i>	<i>Leptotes bicolor</i>
" <i>viridissimum</i>	<i>Lycaste Skinneri</i>
<i>Ansellia Africana</i>	" " <i>virginalis</i>
<i>Brassia caudata</i>	<i>Odontoglossum pulchellum</i>
" <i>maculata</i>	<i>Oncidium bicallosum</i>
<i>Barkeria Skinneri</i>	" <i>cucullatum</i>
<i>Calanthe vestita</i> (both varieties)	" <i>ornithorhynchon</i>
" <i>cureuligoides</i>	" <i>pubes</i>
<i>Cælogyna cristata</i>	" <i>unguiculatum</i>
" <i>Gardneriana</i>	" <i>Wentworthianum</i>
" <i>speciosa</i>	<i>Pleione laginaria</i>
<i>Cypripedium barbatum</i>	" <i>maculata</i>
" <i>Farieanum</i>	<i>Phaius grandifolius</i>
" <i>hirsutissimum</i>	" <i>Wallichii</i>
" <i>insignis</i>	<i>Phalaenopsis amabilis</i>
" <i>venustum</i>	" <i>grandiflora</i>
" <i>villosum</i>	<i>Rodriguezia suaveolens</i>
<i>Dendrochilum glumaceum</i>	<i>Trichopilia suavis</i>
<i>Dendrobium chrysanthum</i>	" <i>tortilis</i>
" <i>moniliforme</i>	<i>Vanda furva</i>
" <i>nobile</i>	<i>Zygopetalum crinitum</i>
" <i>Pierardi</i>	" <i>intermedium</i>
<i>Laelia anceps</i>	" <i>Mackayi</i>

VARIEGATED PLANTS.

<i>Aspidistra lurida variegata</i>	<i>Dioscorea discolor</i>
<i>Ananassa sativa variegata</i>	<i>Dracæna terminalis</i>
<i>Begonia Griffithii</i>	" <i>nobilis</i>
" <i>Rex</i>	<i>Farfugium grande</i>
" <i>picta</i> . (The flowers of this species contrast finely with the foliage.)	<i>Hydrangea Japonica variegata</i>
<i>Caladium bicolor</i>	<i>Maranta pardina</i>
" <i>pœcile</i>	" <i>Regalis</i>
" <i>Chantinii</i>	" <i>vittata</i>
" <i>argyritis</i>	" <i>Warscewiczii</i>
<i>Croton picta</i>	" <i>zebrina</i>
" <i>variegatum</i>	<i>Pandanus Javanicus variegatus</i>
<i>Dieffenbachia seguina picta</i>	<i>Sonerila margaritacea</i>
	<i>Tradescantia discolor vittata</i>

TO CORRESPONDENTS.

PROPAGATING-HOUSE (M. W.).—See what has been said on having such houses partly sunk, and entirely above ground. You have no occasion to have the walls higher than will enable you to walk comfortably in the centre. Suppose that walk were three feet wide, you could have a platform on each side three feet wide. A small boiler would be the best mode of heating. A tank below these platforms, or a four-inch pipe on each side, would give bottom heat; and a pipe of similar size would give top heat. Of course, if your tank were big enough, and arrangements, as lately described, you would want no pipes. Air could be given by having half of the back sashes made to move: or, if fixed ventilators placed in them, two or three openings could also be made in the front wall.

CUTTINGS OF VARIEGATED IVY (B. H.).—They will strike at this time of the year; but the autumn is a better season for the purpose.

HONEYSUCKLES (*Caprifolium*).—We shall be happy to give you all the information we possess, relative to any species you wish to cultivate; but we cannot spare the time, nor money requisite, "to give the whole of the known kinds, with short descriptions," &c. The Editors you name may be wrong; but we cannot undertake to publish corrections of their mistakes. Their own pages ought to find space for such corrections.

VINES IN A GREENHOUSE (*Rebecca*).—The plan will answer very well, and the varieties are suitable.

DESIGNS FOR FLOWER-BEDS (A Young Gardener).—We cannot condemn a work of which we know nothing.

A. B., H. S., W. J. A., M., H. S., F. H. X. S., and O. P. Q., will see their inquiries have met attention, in a communication from Mr. Fish.

PLUM EXUDING GUM (W. H. H., L. D.).—As there is a cavity through the stock, there is such a probability of gradual decay, that we advise you to plant another tree. Root-pruning will be of service if the tree is over-luxuriant. The cavity may be stopped with a plaster composed of equal parts of clay and cowdung, softened with water.

PICEA NOBILIS (G. K.).—There is something wrong at the roots. It does not require so much decomposing matter as you gave it. We should remove the mixture of turf loam and decayed leaf mould, and replace it with two parts turf loam, and one part each of sand and lime rubbish. Is the soil well-drained? This tree does not require syringing. It requires a dry air and good drainage, being a native of mountains in North California.

BOTANICAL BOOKS (A Lady Subscriber).—Add to your library, for under-gardeners, Henfrey's "Rudiments of Botany," "Vegetable Physiology of Chambers' Educational Course," and Hogg's "Vegetable Kingdom."

VARIOUS (A Constant Subscriber).—We do not remember an article on tepid water for seed soaking. It is impossible to prescribe any fixed quantity of sulphuric acid for fixing ammonia in liquid manure. A wine-glass full to a bucket must be usually sufficient. Put in the acid unmixed. It is the same as oil of vitriol. We know of nothing cheaper.

NATIONAL PROVIDENT SOCIETY (R. L.).—We know nothing of this. He is wise who is contented with the Savings' Bank. We gave the names of your plants last week. The delay was unavoidable.

SLUG-KILLING MINERAL (E.).—We find the following in "Chambers's Journal":—"Referring to the statement in the September Month concerning the insecticide powder exhibited to the Academy by M. Millot-Brûlé, we take the opportunity to mention here, that the sulphur-coal of which the powder is said to be composed, exists abundantly in England, and is known among geologists and miners as 'coal brasses.' Large quantities are raised near Halifax, and used in the manufacture of vitriol and copperas; as also in the adjacent counties of Lancashire, Durham, and Northumberland. In South Wales, the coal contains pyrites of a superior quality, which, after a roasting to expel the sulphur, are used in the manufacture of pig-iron. According to the returns prepared by Mr. Robert Hunt, and published by the School of Mines, the quantity of pyrites raised in the United Kingdom in 1857 amounted to 74,000, worth £63,000. In this the pyritic coal, or coal brasses, figures for 11,000 tons."

SMALL FLOWER GARDEN (An Amateur).—It was a happy hit to give the flower-borders which surround the actual flower garden. You are quite right, and the idea is very good. Yet, if the plan were on grass, and nothing round it, the planting would need to be reversed, so as to have the lowest plants in 1, or in the centre. But we suppose all the plants in the flower garden—"the whole mass"—to be lower than the back rows of the borders, which go round the garden. Therefore, the centre of the scene is actually the lowest, and your planting is good and judicious.

COVERING BLOOM (Bessie Brown).—We disapprove altogether of every kind of covering which cannot be taken "off and on" as easily as our own spectacles. A covering of the finest muslin, which you suggest, will do just as much harm as good, to any kind of blossom, if it is not lifted up, or drawn aside in the daytime; and if it can be so removed, then a thick blanket can do no hurt. The expense of the contrivances to move the blanket, or the muslin, being the same, we should prefer the thicker covering as keeping off more cold, or frost. Stout canvass—Frigi Domo, and Shaw's Tiffany, are best for you.

COVER FOR A PLASHEDED HEDGE (A Subscriber).—There is no climber but Ivy that would do; and, in so doing, the Quick would be killed. The only plan which occurs to us, is to plant a row of Privet in front of the cut-down hedge, and as close to it as may be. Quick and Privet agree very well together; and the Privet being free from the Quick, it would make a green fence all the winter.

CYCLAMENS (A Constant Subscriber).—Your Cyclamen flower belongs to the new race of crosses between *Coum* and *Persicum*, of which *Atkinsii* was the first. These have no particular names. No Cyclamen, except *Coum*, can be made out from a leaf. We know of no book such as you ask for.

INDEX (Kate).—We shall be obliged by your favouring us with your address.

PIGEONS (A Lady).—We know of no mode of keeping Pigeons from a garden, except by having some one to scare them or shoot them.

ROCKERY PLANTS (Idem).—In our No. 489, you will find a very long list

of such plants. It was published too recently to justify us in reprinting it. You can have the number for threepence.

HEATING A GREENHOUSE (W. X. W.).—One row of four-inch hot-water pipes round a greenhouse, which is thirteen feet broad, by sixteen feet long, and seven feet and a half high, will be sufficient.

NAMES OF PEARS (A Subscriber).—No. 1 is *Passe Colmar*. No. 4. *Winter Nelis*, with a decided *Passe Colmar* flavour. Is it grafted on the *Passe Colmar*?

THE POULTRY CHRONICLE.

POULTRY SHOWS.

MARCH 15th, 16th, and 17th. SHROPSHIRE. Sec., T. W. Jones, Church Street, Wellington, Salop.

MAY 25th and 26th. BEVERLEY. Sec., Francis Calvert, Surgeon, &c.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Litman, Esq.

JULY 1st, 2nd, 4th, and 5th. SHEFFIELD. Wilson Overend, Chairman. Entries close the 15th of June.

N.B.—Secretaries will oblige us by sending early copies of their lists.

DISCOURSIVE POULTRY PAPERS.

(Continued from page 316.)

WHEN first poultry was taken up as a pursuit, it was called a "mania." This was a misnomer. Poultry Shows, like many other things, are the result of facilities of communication arising from railways. How was a Show possible thirty years ago, when a first-rate town had only a few coaches to serve it? Those who run to Liverpool, spend three hours in the Show, and then get back to London in the day, have no idea of the difficulties of former times, when the place must be booked a week previous by the "Umpire." The grumbling of the guard at the quantity of luggage—the screaming of the fidgety inside, when a slight bonnet-box fell into the recesses of the boot, followed by a heavy deal case—the twenty-two hours' comfortless ride—the seemingly endless length of the last three stages—the drowsiness and broken sleep, and the *fit-for-nothingness* when you arrived. How was a Show possible? How would the 1,600 pens and 30,000 visitors of Birmingham have reached that great town? Poultry, then, instead of a mania, is a progress. It is good for men to mix together, and to mix with the greatest possible variety of their fellows. The man who lives constantly on one spot, at last makes that his world, and will end by fixing the boundaries of it by the three or four towns in different directions he is obliged sometimes to visit. Anything beyond is to him what paradise is to the Indian—a dreamy something, hidden by mountains and enveloped in clouds.

This is another digression; and the moral will be, perhaps, as satisfactory to our readers as the sponges and the umbrellas were to the inheritors, of whom we have before spoken. It is, that Poultry Shows have done, and are still doing, good in every way—among others by forming friendships. Many can date some of the pleasantest passages in their lives from intimacies that have sprung from a community of amateurship, and the interchange of a fowl, or a few eggs.

Now to the chickens. They were doing so badly, that, teased or not teased, our young friend was determined to have recourse again to Mr. Taplin. He never wanted asking twice, and came directly.

"Poor little things," he said, "I wonder if one of my Pheasants hatched out of season, whether anybody would provide a nice piece of carpet?"

"That is not fair," was the answer. "You know they will not hatch out of season; and if they did, the young would die."

"You are right, and I am talking at random. Nothing can be worse than this. First, a brick floor is damp and cold; it causes cramp in poultry. Next, the carpet makes it worse; it holds the damp continually. We must move them directly. But you have given your hen more work than she can do. By your own admission, these are out of season; they are too early. Instead of helping them, as it would in May, the weather continually checks them. The nights are twice as long as the days; the earth is cold and naked, and provides no food. They fast long; and, therefore, require more warmth. We will try to overcome some of these difficulties. First, let us seek a place for them. What use is made of that old shed?"

"None."

"The very place we want."

It was an old shed, such as is to be found in almost all yards—not farmyards, but those belonging to semi-private houses. It was about twenty feet long and eight high, the flooring was several inches deep in dust, the thatching at the back was down to the ground, and the ends were closed, so that no draught was possible. Here Mr. Taplin put the rip on the dustiest spot possible, and then went to fetch the hen and her chickens. "See," said he, showing her under-feathers, "these are all damp and matted; they afford neither warmth nor comfort when she covers her brood. You will see the difference."

The hen was hardly under the rip when she began to make herself a bath in the dust: she laid on her side; she scattered it on her back; she loosened all her feathers, and did not know how to enjoy it enough. When the chickens were brought, it was found eleven remained of the fourteen. They underwent a close scrutiny, and, to the horror of the lady, six were sentenced to death. This was dreadful.

"What is the matter with this?"

"It has but four toes."

"And this?"

"It is crooked."

"And this?"

"It is cramped."

"And this?"

"The legs are deformed."

"But they will be very nice by-and-bye to eat."

"They will not live."

"Oh, yes they will, now you have chosen them a place."

"The hen cannot rear them."

"Well, then, do not let me see them killed."—She went away; and, for the first time, she regretted consulting Mr. Taplin. She was vexed; and, perhaps, something akin to the feeling showed itself on her face, for the gentleman felt it necessary to offer the following explanation:

"You may, in May, hatch as many chickens as you will under a hen; and the probability is, barring accidents, she will rear nearly all. But you must recollect, the nights are short and warm; the days are long; herbage is growing, and the grass is full of food. The necessity for brooding the chickens is not so imperative on the part of the hen; but now there is no natural food. The nights are cold and long. All the warmth from evening to daylight must come from the hen. The chickens I have just ordered to be killed might have lived a fortnight longer; but every week's growth rendered it less likely. Even now the hen can hardly cover all; and as they increase in size, it becomes impossible. The outside ones feel the cold at night, and do not rest till, either by dint of fidgetting, or by a motion of the hen, they have succeeded in getting under her: but to do this they displace another; and thus one by one they become chilled and cramped. It is rare for them to live; but they never make good fowls. The hen can cover the five that remain so long as it is necessary, and they will grow. Having, I hope, vindicated myself from the charge of wanton cruelty, let us feed the survivors."

They already looked better; and they, too, enjoyed the dry dust. A board was placed before the rip, on which some groats and chopped egg were thrown. They ate it greedily.

"If," said he, "you mean these to be early-exhibition chickens, you must feed them, or have them fed, after dark. If you will have them well covered up with sacks, or old carpets, at dusk, I will feed them for you, as I shall be dining with your father to-night."

About half-past eight, provided with a lantern and a plate of food, he proceeded to the shed. He uncovered the rip. The hen soon saw the food, and called the chickens to feed. They were fed again at half-past ten. It was astonishing to see how soon they got accustomed to this repast, after dark; and at the first twinkle of light through their covering they were all ready to feed. It was discontinued as the nights got shorter. These chickens figured in more than one prize-list, and were at last claimed at a good round sum.

BOLTON AND LANCASHIRE CENTRAL POULTRY EXHIBITION.

THE first Exhibition of the above Society was held on the 23rd and 24th of February. There were more than 400 competitors, and 1000 birds exhibited, and the excellence of the various classes was fully displayed. The Judges of Poultry and Pigeons were Mr. Tegetmeier, of London; Mr. Teebay, of Pres-

ton; and Mr. Foulds, of Atherton. Mr. Ridgway, of Warrington, judging the Canaries.

The *Dorkings* were a very good class. The first prize was awarded to Captain Hornby, of Knowsley. *Buff Cochins*—First prize, Mr. Copple, of Eccleston. Brown and Partridge-feathered—Mr. James Cattell, of Birmingham, took the first prize. *Brahma Pootra*—Mr. T. W. Redhead, of Bolton, was placed at the head, taking also the second prize. In *Game*, Mr. Angus Sutherland, of Burnley, took the first prize in the Black-breasted and other Reds. Mr. Moss was the successful competitor in the Duckwinged and other Greys and Blues. In the Whites and Piles, Messrs. Haigh and Hartley, of Holmfirth, were first. Mr. Adam Hampson, of Bolton, was the successful competitor in any other class of Game. For a *Single Cock* (*Game*), of any age or colour, Mr. W. Dawson, of Mirfield, was awarded the first prize. In the *Pheasant* or *Hamburgh* Class, Mr. Worrall, of Liverpool, was the first.

Mr. Dixon, of Bradford, was first for *Geese* and *Turkeys*; and Mr. J. C. Forrest, of Darwen, for *Aylesbury Ducks*; Mr. David Jones, of Bolton, for *Rouen*; Mr. Dixon being the first for *any other variety*.

The collection of *Pigeons* was considered exceedingly good. The following persons took the first prizes:—Messrs. Eli Fielding, of Rochdale; G. W. Hartley, Kendal; Peter Eden, Salford; P. H. Jones, London; George Goose, Aigburth; Francis Mewburn, Darlington.

The *Canaries* also attracted much notice; there being some very valuable and choice birds amongst them. Mr. Abraham White, of Bacup, took the first and second prizes for clear Yellow Belgians. Mr. John Robinson, of Manchester, being first in clear *Buff Belgians*. Mr. Joseph Orrell, of Little Bolton, was awarded a prize of ten shillings for the best *Cage* for exhibition purposes.

We shall give a complete list of prizes, and special particulars of the opinions of the Judges in our next.

FYLDE POULTRY EXHIBITION.

(From a Correspondent.)

This first Exhibition of Poultry and Pigeons, was held at Poulton-le-Fylde, on the 16th and 17th of February. The poultry exhibited was of first-rate quality. The Show was patronised by many fashionable visitors and well-known exhibitors; and it is highly gratifying to all parties concerned in the arrangements, to see their first Show go off so satisfactorily—it having attracted the attention of poultry fanciers in every part of England.

The *Spanish* were very good. The first-prize pen in adults, belonging to Mr. J. Garlick, is not to be surpassed. In the class for *Chickens* of this variety were fourteen pens, all of which were deserving of prizes.

The *Dorkings*, although few in number, were not to be beaten in quality; and the two well-known exhibitors, Captain W. W. Hornby and John Robinson, carried off the honours in this class.

Cochins of all colours were included in one class, and brought out all the great guns. Messrs. Copple and Watson securing the two prizes, leaving Messrs. Stretch and Tomlinson to be satisfied with commendations.

In the class for *Game*, Black-breasted and other Reds, most of the best breeders in the kingdom competed. The prizes were awarded to G. W. Moss and A. Sutherland. We need say nothing about the merits of these two pens, they having told for themselves by the very many prizes which have been awarded them.

The class for *any other variety of Game*, though limited in number, were highly commendable birds.

In *Game Chickens* the competition was stronger than in any other class. Mr. G. W. Moss again taking first prize; closely followed by Mr. Leigh, who took second.

In the *Hamburgh* classes the competition was severe. Messrs. Carter and Gaultier again heading the list in Golden-pencilled Hamburgs. The extra prize for the best pen of the Pencilled variety was also awarded to the same pen. Mr. W. C. Worrall took first prize in Golden-spangled, and also the extra prize in Silver-spangled. Mr. Teebay took first, and Mr. Dixon, second, with two highly-meritorious pens. Mr. Dixon also took first prize in Silver-pencilled; Mr. Griffiths running him hard up.

The *Polands* afforded an easy triumph to Mr. Dixon.

The class for *any other variety*, contained seven different

varieties; the prizes were, however, both given to one breed (Brahma Pootras).

In Aylesbury Ducks, Mr. J. K. Fowler took first prize with a pen that left little to be desired.

We are able to speak most highly of the *Bantam* classes, and more especially of the first-prize pen belonging to Mr. Leigh.

The *Pigeons* were few in number, but of rare quality; the whole of the prizes being taken by two well-known exhibitors—viz., Messrs. Child and Brown.

The *Single Game Cock* and *Cockerel* classes were, in themselves, a Show. Messrs. Sutherland and Leigh, who took the first prizes, exhibited birds that left nothing to be desired.

The Judges were—Messrs. S. Foulds, of Chowbent, near Manchester; and Mr. W. Chorley, of Warrington.

GAME BANTAMS.

I HEAR so many different opinions of what a Game Bantam ought to be in shape, make, and carriage, that I am sorely puzzled; therefore appeal to you for your advice. I am told that a Game Bantam ought to be, in shape, make, and carriage, the same as a Game cock in miniature; having his wings not in the least depressed, but compressed, or tightly drawn up. On the other hand, I am told he should have depressed wings—the shape, make, and carriage which are generally recognised as belonging, in fowls, specially to Bantams, and in Pigeons to Fantails. He is only a Bantam, not a Game cock; therefore, why is he to differ in those points from his brother Bantams? Now, are his wings to be depressed or not? that is the question.

In the "Poultry Book," by Messrs. Wingfield and Johnson, published in 1853, at p. 140, amongst the characteristics of the Game Cock we find these words, "The wings inclined to expand, and cover the thighs, somewhat after the manner of a Bantam." I understand that means not so much as in the Bantam. At p. 194, in the description of a Bantam, it is stated, "Wings depressed, especially in the male birds." And at p. 195, in reference to the black-breasted red Bantam, Mr. Hewitt says, "In colour and general appearance being the fac-simile of a diminutive Game fowl of that breed."

At a recent Poultry Show, I was told that Game Bantams with depressed wings have not a chance of a prize.

I have been brought up with the idea that one of the characteristics of a Bantam was a depressed wing, and that it could hardly be too much so. I do not maintain for an instant that I have been properly informed on that point. I seek information; and I want an established rule either one way or the other; so that it may not be left to the caprice of any Judge or other person, and that we may have a rule to guide us in judging and breeding.

It is much to be desired that there should be established rules for all classes of poultry. I have mentioned this to one of the Secretaries of one of our principal Poultry Shows, and hope it will be carried out.

I am not a little surprised to see in a letter in a contemporary of the 12th instant, from an eminent poultry judge, that "in Duckwing Bantams numerous deficiencies have been passed over on account of the rareness of the colour." To say the least of it, is that fair play towards good birds? Would persons in general purchase or continue to breed bad-shaped horses because they happened to be of a rare colour? Again: would it be right in the case of an exhibition of horses and cattle, that one of them, though having numerous deficiencies, should have the prize awarded because he or she was of a rare colour? I trow not. Such a system will and does mislead. Let the Judges remark upon them by notes appended to their decisions, but not award them the prize.—*SAPERE AUDE.*

[Recent shows should prove to any observer, that certain rules have been carried out in judging Game Bantams. These classes are a new and popular introduction, and have about them that which belongs to no others. They are the representatives of a class of larger birds, only reduced in size. Game Bantams should be very small Game fowls. No Game Cock would be allowed to compete for a prize if he dropped his wings, if he were rightly judged. That would not accord with the hard, close, compact plumage that is so essential to success, or to the firm, bold outline of shape that is necessary. The Sebright Bantam is a composite bird; and, when perfect, realizes the object of its Maker—a bold, strutting, vain bird,—the Tappertit of fowls,—with depressed wings, a dainty gait, and strutting as though the earth were

unworthy to carry him. A double comb is essential to this bird; a single one is fatal; so is a close wing. What single combs and close wings, then, are to Sebrights, drooping wings would be to Game. But this is not the only point in which Bantams differ. Sickle-tail-feathers disqualify Sebrights; they are essential to Black and White.

The Game Bantams should have a snake head, close feather, ample and streaming tail. He should be bold in his carriage; in fact, the counterpart of his larger brother.

We know not who the eminent judge may be who allows the colour of Duckwings to cover numerous deficiencies; but we do know, that at the Crystal Palace and Liverpool, their colour could not save them from defeat. The colour is no longer rare, though not so numerous as Black Reds. They were first shown at the London Show, some years ago, by Mr. Forrest. They were very rare then; since that time they have become, comparatively speaking, plentiful.

It is not for us to say what the Judges will do: but we advise those who are breeding Game Bantams always to carry a Game fowl in their eye when they look at them; and, above all, to do so when they are selecting for exhibition. Above all, avoid a drooping wing, and choose the carriage of a Game Cock.

The difference between a Game and Sebright Bantam may be distinguished as dignity and impudence.]

OUR LETTER BOX.

VERTIGO IN A FOWL (One in the Ring).—We have little doubt that your cockerel has a pressure on the brain. Having bled him without benefit, we can only recommend in addition, that you keep him on soft, low diet, such as boiled rice and mashed potatoes. Do not let him be exposed to the sun; but let him out into a grass run when it is cool and cloudy. The affection, probably, arises from a ruptured small blood vessel in the head. Do not let him be frightened; and do not let him have much food at a time.

SELLING FOWLS (K. D.).—We know of no dealers who buy as you require. We should send the birds, if good, to Mr. Stevens, and have them sold at one of his poultry auctions.

PRESTON POULTRY SHOW (G. B.).—We believe all that you state, and should do so even without the many other complaints which we have received; but we cannot insert your letter. If all the other complainants resolve as you do, "to have done with the Preston Show," its Committee must either have other Judges, or it will be abandoned.

LEGS OF GAME FOWLS (J. B.).—You must not be alarmed at what you hear from some of your friends, about the colour of your Game fowls' legs. Any colour is correct, provided all in the pen are the same. There is no fixed colour for the legs. Neither do we see any objection to feather. Short legs are not desirable in a Game cock, and that is the only serious fault we discover in your description. If they have won in Yorkshire, they have not much to fear in other counties.

POULTRY STOCK (Fred. B.).—It is very fortunate that you only require eggs, otherwise Hamburgs, Shanghaes, and Dorkings, mingling together, would give strange combinations. As you only require eggs, the single cock may remain sole lord of the zenana. We suppose you have a yard, or run, for the birds besides the sixteen-feet-by-eight-feet house.

BREASTS OF DORKINGS (Monte Christo).—The crooked breasts of your white Dorkings would not be a disqualification, unless the competition were very close, and no other means existed of deciding. But it is an indication of weakness, arising either from want of constitution, or bad feeding when the chickens are young. It will be only a wise precaution to get a fresh cock, and to be sure he is straight-breasted. If your perches are very narrow, substitute wider ones.

CONDEMNED SHIP BISCUITS (Local Subscriber).—Ship biscuit is a valuable adjunct in feeding poultry, if it is not mouldy. We should think it quite as good as Indian corn, but not so good as oatmeal. We should approve of it for a change, say two days per week; or, in the summer, a little oftener. Variety is the great desideratum in feeding, providing none of the food is hurtful. Whole corn is the most extravagant. One part is lost, and another taken by small birds. We are not sufficiently acquainted with the merits of ship biscuit to give an opinion of its properties compared with other food; but, when soaked, it must be good; and we should not hesitate to use it for any fowls twice in the week. There is no doubt soft food, such as this would make, is very beneficial to poultry; and we recommend you to try it. We shall be glad if you will favour us with your experience.

BURNLEY POULTRY SHOW.—“Can you inform me when it is likely the prizes awarded at the Burnley Poultry Show will be paid? Considering that it is now nearly two months since the Show was held, I think this delay is not creditable to the Committee, whose conduct, in this respect, contrasts very unfavourably with the course pursued at Ulverston and Poulton, where the prizes are already paid. I fear this is not yet the case as regards Crewe.”—A BEGINNER.

POULTRY IN CONFINED SPACE (J. Mackenzie).—In a space twenty feet by nine feet, do not think of keeping Dorkings. Any variety of the Cochin-China, among which we include Brahma Pootras, will do the best. One cock and four hens will be the most you ought thus to confine.

WHITE TRUMPETERS (L. M. N.).—You will find your inquiry answered in a paper on the points of the varieties, which is already in the printer's hands; and for further particulars see COTTAGE GARDENER, No. 454, June 9th, 1857.—B. P. B.

WEEKLY CALENDAR.

Day of M'nth Week.	Day of the Week.	MARCH 8-14, 1859.	WEATHER NEAR LONDON IN 1858.						Clock afterSun	Day of Year.		
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.		
8	TU	SHROVE TUESDAY.	29.376-29.232	42-25	N.W.	—	33 af 6	49 af 5	43 10	4	11 4	67
9	W	LENT BEGINS. ASH WEDNESDAY.	29.629-29.581	43-28	N.W.	—	31 6	51 5	morn.	5	10 49	68
10	TH	Hovea purpurea.	29.792-29.730	44-19	N.W.	—	28 6	53 5	6 0	6	10 34	69
11	F	Erica transparens.	30.014-29.892	42-19	N.E.	—	26 6	55 5	28 1	7	10 18	70
12	S	Epaeris bicolor.	30.163-29.939	43-31	W.	.17	24 6	56 5	41 2	8	10 2	71
13	SUN	1 SUNDAY IN LENT.	29.513-29.300	44-35	S.W.	.12	22 6	58 5	41 3	9	9 46	72
14	M	Boronia Frazeri.	29.608-29.460	51-37	S.W.	.06	19 6	v.r.	24 4	10	9 29	73

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-two years, the average highest and lowest temperatures of these days are 50.4° and 32.8°, respectively. The greatest heat, 68°, occurred on the 9th, in 1856; and the lowest cold, 7°, on the 10th, in 1847. During the period 143 days were fine, and on 81 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

AMERICAN CRESS.—Sow.

ASPARAGUS.—The beds, if not dressed as advised last week, should be done as soon as possible. The salt may be applied at the rate of about one pound the square yard. Sow seed in drills.

BEANS, BROAD.—Transplant to the open ground, in favourable weather, those that have been forwarded in pots, and have been hardened by proper exposure.

BRASSICA.—Sow *Purple-sprouting* and *Early White* for autumn use.

CABBAGES.—Transplant from the autumn-sown beds. Draw earth to the stems of the early crops in dry weather.

CARDOONS.—Sow, if wanted for early use.

CAULIFLOWERS.—Stir the surface of the soil amongst the plants under hand-lights. Tilt the glasses on the side away from cold cutting winds, and expose them to the genial influence of mild showers.

CHEEVIL.—Sow.

CUCUMBERS.—Keep up the temperature from 75° to 80°. Be careful to guard against a violent bottom heat.

MELONS.—Sow seed in heat, as advised for *Cucumbers*. But very little is gained by earlier forcing.

ONIONS.—Sow, if not done last week.

PARSLEY.—Sow, if not already done. Clean and loosen the soil between the rows sown last season.

PEAS.—Transplant, as advised for *Broad Beans*. Make a sowing of *Knight's Dwarf Marrow* and any other favourite sorts for the main crops.

POTATOES.—Plant the main early crops as soon as possible.

SPINACH.—If the plants were left standing too thick in the rows, it is advisable to remove every alternate one, to give a greater facility for stirring the soil, and to allow more space for increasing growth. Sow the *New Zealand* in pots or boxes, and place in a gentle heat.

TURNIPS.—Make another sowing of *Early Dutch*, *Stone*, or *Snowball*.

FRUIT GARDEN.

FRUIT TREES.—In general, they appear to be well supplied with fruit-buds; and, being in a very forward state, will require particular care and attention to protect them from frosts, if they should set in rather sharply.

STRAWBERRIES.—Weed the beds before the plants begin to grow.

VINES.—If they are old and neglected, covering a large space with useless wood in a confused state, the knife must be freely used to cut away a large portion of the old wood and the weakest shoots, leaving only the strongest about eighteen inches apart, and not more than three eyes in length. The loose bark to be picked off; the cobwebs and accumulated dirt to be brushed off from all parts of the wall, or trellis, to which they have been fixed; and the branches and shoots to be firmly nailed, or tied, without being too much confined.

FLOWER GARDEN.

AURICULAS.—Encourage their growth by an increase of water, that they may receive no check in the development of their flowers, and by a liberal supply of air at all favourable opportunities. All weak and secondary trusses of bloom to be removed as soon as they are visible. The flower-stems to be slightly shaded from sudden sunbursts.

HALF-HARDY ANNUALS.—Sow on a slight hotbed.

HARDY ANNUALS.—Sow in the open ground, when the weather is fine.

HERBACEOUS PLANTS.—To fill up the hiatus, or gap, between the early spring and summer-flowering sorts, plant *Achillea tomentosa*, *Alyssum saxatile*, *Aubretia purpurea*, *Corydalis capnoides*, *Iberis sempervirens*, *Orobus vernus*, *Phlox verna*, *Polemonium Mexicanum*, *Mecanopsis Cambrica*, *Sanguinaria Canadensis*, and *Viscaria oculata*.

PANSIES.—Plants with five or six branches to each to be pegged down at equal distances, leaving about two inches of the top part of the branch above the ground. By such treatment, they are not so liable to be damaged, or broken, by high winds; they produce finer flowers, and exhibit a much neater appearance. Sow seed.

POLYANTHUSES.—Sow seed, placing the pans, or pots, in a gentle bottom heat.

RANUNCULUSES.—If not already planted, according to the directions previously given, they should be put in without delay.

ROCKERY.—Any vacancies in the old—or, if new rock-work is made, which is becoming very general in suburban villas—should now be filled up with many of the herbaceous plants already named, as also with *Arabis albida*, *Astragalus* (of different varieties), dwarf *Campanulas*, *Dianthus* (of sorts), *Draba Aizoides*, *Phlox setacea*, and *P. procumbens*, *Linum Tauricum*, *Saponaria ocymoides*, *Saxifraga* and *Sedum* (of different sorts), and dwarf *Veronicas*.

TENDER ANNUALS.—Sow on a gentle hotbed; seedlings to be freely exposed to air when up, to keep them dwarf and stocky.

WILLIAM KEANE.

SPRING FLOWERS—PROPAGATING HEPATICAS.

LET US not lose sight of any spring flower, which is likely to be of use or ornament, no matter how scarce it may be,—how difficult to procure, keep, and propagate. And let me instance the *Golden Chain* Geranium as an example of what I mean.

This time fifteen years ago, it was the rarest Geranium in Europe of all that were ever in the trade. It was also the least known among gardeners; and there was only one nurseryman in the kingdom who had six plants of it on sale, and he had only five plants that his conscience would allow him to sell: that was Mr. Jeffries, of Ipswich. At that time, the *Golden Chain* was so debilitated, by bad culture and neglect, for the space of 150 years; and there was not a single gardener alive who

knew how to manage it, or to bring it round, so as to be depended upon. Therefore, no plant can or could be less promising than the *Golden Chain* was at that period; but now it is known all over the world as the veriest gem, and not more difficult to keep and propagate than *Countess*, or any other delicate-growing kind. While the need and the spring are before us, is the right time to put on the steam, and search out the riches of the four kingdoms for the spring ornaments—that is, the riches of spring flowers in the vegetable kingdom, and in the kingdoms, or rather queendoms, of England, Ireland, and Scotland. Let us bring them all up for proof, for registration, and for replenishing the beds and borders, at this the most delightful season for enjoying flowers of all the periods in the twelve months.

Anyone, therefore, who will take the trouble, and be kind enough to send us the names and particulars about every out-of-the-common plant he may see or hear of this spring, will be doing a really good work.

To show what I mean in another light, I shall begin the tune myself with the highest note that I can sing. Who has got the largest number on sale of the *Double-white Hepatica*? I could find 500 ready-money customers for it, and some of them would be for taking more than one plant; but they must be comfortable-sized plants, in full bloom, and not over 2s. 6d. each,—nothing being so injudicious as to charge enormous prices for any one thing, and for any spring flower in particular.

The next note is nearly as high. How many gardeners are alive now who have seen a *Single-white Hepatica*, the next in excellence after the double-white? Without telling all that I mean, I may say, with a clear conscience, that I never saw a Double-white Hepatica, or a Single-white Hepatica, till this spring; but, the other day, a good supply of one of them was received, carriage free to London, at the Experimental Garden, from the country, and from a friend whom none of us know personally.

From Guernsey, we had the loveliest of all the *Lachenalias* for winter and spring flowers—the *Lachenalia quadricolor*, blooming there all the winter in the open air. It is most like to *tricolor*, but considerably larger in all the parts, and more like *aurea* in the growth of the leaves. A cut flower of it, which was broken by accident, kept in bloom, in water, in a warm room, just twenty days. The plant ought to get into the London trade.

Scilla autumnalis, another rare British pink flower, came with it; also, *Trichonema Columnæ*, one of the smallest of spring flowers. But, without going to a botanical nicety, there are divers old spring flowers which are as much lost to the public in general, as if they never had existence; because they are only in some old and out-of-the-way gardens.

There was a double crimson-and-white Auricula, and a double purple-and-yellow Auricula. The colours were striped, and Peter Egerton, Esq., of Broughton, near Chester, once possessed them both—"the two choicest rarities in Flora's cabinet." And "Mr. Jacob Bobarts, who kept the Physick Garden at Oxford," raised clear scarlet Auriculas, with "snow white" eyes. Where are these to be had now? or who can supply a bright scarlet Primrose, "the most estimable" of them all to come in before the yellow bedding Pansy, which was sent to the Experimental from Mr. Sim, of the Foot's Cray Nursery, Kent, and is by far the best yellow, for beds and stripes, that I have seen? Even the hottest part of last summer never stopped it one day from flowering the whole season; but the best bloom was from the old plants, which were divided into small bits at the end of March. The plants from cuttings had no chance with these in the tremendous hot weather.

What a beginning to a ribbon border, to have the clear scarlet Primrose in front of this yellow Pansy, last April; and next, after the yellow, the *Trentham Blue* bedding Pansy. Then the *Golden Chain*, or what you

please; and after the *Golden Chain* the *Imperial Crimson*, which was lost 150 years since, but which, by great industry, the writer has revived, and sent into the wide world again, with as good a character as the *Golden Chain*; and, in future, the *Golden Chain* and *Imperial Crimson* must go together in ribbon gardening: and for a front to them I know nought so good as the yellow and blue Pansies aforesaid; only I do not know the blue personally. Mr. Salter first told me about the *Trentham Blue* Pansy.

But I have been running away from the best part of my subject—the old fashion, instead of the new-fangled names and notions. I was going to say "how" they do the Hepaticas at the Experimental Garden to pay better than in most places. They take large lumps of them, and pot them into broad, shallow seed-pans, in which they grow and bloom the Achimenes. Just as they are beginning to open their flowers out of doors, put them into the conservatory, where they bloom to far greater advantage than out of doors. You could hardly believe how gay this house has been all through February with spring flowers, Heaths, Epacries, and Camellias; but the Crocuses, the Hepaticas, the Cyclamens, the Narcissuses, Dielytras, Aubretias, and China Primroses, all in large patches, look as gay and cheerful, and much better than if it had to be supplied from forcing stoves. Most of the spring flowers, *in large specimens*, look just as well, and are every whit as good as the best Orchids and stove plants, only in little pots; for little pot-plants are now less suffered for decoration than they used to be.

Every year brings on more of the bedding system with spring flowers, and better specimens of pot plants for the conservatory. The stupid system of growing free, bushy plants to such an enormous size, as that no ordinary house or strength of men could hold or move them about, is fast giving way; and the ridiculous notion about the greater number of kinds of plants making the richest collection is now, happily, all but given up; and instead of 50 or 500 species in little pots, or in small patches here and there, about the borders, we see 500 of one kind in one row, from end to end, every one of which may be removed to make room for the next crop.

The Hepaticas just named seem the most conservative of the whole race of spring flowers. Who would think of changing Hepaticas to make room for bedders? But get into the right way of dividing them; show large specimens of them in flat pots to the ladies in the drawing-room, in full bloom; and the thing is done without your knowing how. As soon as the flowers begin to fade, you must remove them out of doors, or out of sight somewhere. They are of no more use this season; and to neglect them now is just the way to make them more scarce another year. Therefore, unless you have a better plan of your own, do them as they are done at the Experimental. The moment you see the flower in the bud, cut off every one of the old leaves—they are, like the old leaves of Strawberries, of no more use. Take up every one of them at once, with as much earth as they will carry—and they carry a great deal of it for such little plants. Put some of the best kinds in pots, to bloom in-doors: they would do so in the back kitchen as well as in the front drawing-room. Plant all the rest round the beds, nearest to the windows, just as you would Crocuses—one colour in a row, or round one bed; or mix all the colours in one row, according to your fancy. There are a very double deep-blue one, and a half-double light-blue, and a single-blue; another, very double-rose or peach colour, and a half-double of a lighter pink, and a single-pink one; also a single-white, and perhaps a double-white, but I never saw it. Those that you bloom in-doors will be over the soonest; and that is the right moment to divide them for increasing your stock: for I am all but certain, without seeing yours, that you have not yet one quarter of the number that you will need, and must have, in a year or two, if this rage for spring flowers goes on as it began—and the chances are that it will go much faster.

Well, before dividing them, see that their new leaves are hardened a little under some shelter; but they are not so particular as regular pot-plants. Turn them out of the pots or pans; and, with an old table-knife that has a sharp point, divide the plant into two equal parts; managing the movement of the knife so as to cut none, or but very few, of the leaves and crowns, from whence the leaves come. Then, if the two halves are big, cut each of them also through the middle, and again, if you choose; but that must be on your own responsibility. For my part, I would much sooner go to the nurseries and buy, than risk cutting more than would leave me six or eight crowns to the piece. The whole are now to be planted in a rather shady place in the kitchen garden—just as Polyanthus are at the end of their blooming. They, and the Polyanthus, and the Auriculas, will be in good time for the beds this time next year, if you transplant them from the kitchen garden any time in January or February when the weather is mild. The three like deep, rich, sandy soil. If your soil is sandy, or not too strong, rotten dung and a steel fork will make it all that is necessary for nine-tenths of all the spring flowers that can be moved; and, surely, when we can safely remove the largest and the oldest Peony in the garden, as soon as it is out of bloom, and the hot summer on our heels; as surely may we trust these tiny things when no heat is expected. But the proof of the thing is better than all the reasoning in the world. This mode is proved, and you have only to do it. Then, recollect the moment, or the very day your Hepaticas are done blooming, round the beds, or in front of a ribbon-border, they are to be divided in the same way—provided always that they are not sufficiently small already—and your patches of Hepaticas, which look no better than a patched petticoat, ought to be taken up and served the same way. There is not one man out of ten thousand, or a woman out of one thousand, who is aware of the rapidity of the movement in Hepaticas, when they are done well and properly at the proper time. One out of a hundred put me up first to this move. I have been all these years a gardener, and knew no more about Hepaticas than a little child. Some people find them hard to do, and so did I; but the reason is, that we always let them do for themselves. They only require attention from the middle of March to the end of May, and during that time they ought not to lose an hour's healthy growth day or night. The ground should be moist about them all the time, and also mulched with sifted mulch from littery dung; and the quantity of very old and very rotten dung they will consume is really surprising. If one-foot deep of the bed for them could be passed through a rough cinder-sieve, and be of one-half very rotten dung, and one-half fresh sandy loam, you would hardly know they were the same plants next year; but they should never get a drop of liquid manure, as their growing time is naturally so short, and no great heat to stimulate their leaves to digest liquid manure. It would not be a bad experiment, to keep one good plant in a pot all the time, and have the pot in a draught of air, in the greenhouse; then the mildness and extra heat might cause it to seed, and to endure very weak liquid manure: and, if so, my word for it, they might be had as numerous as any of the sporting families of plants.

D. BEATON.

COMMON PRACTICES.

SOWING.—“Wo’n’t I show the slowcoaches something worth noting! I am determined to have early Peas; and secure them from frost, and slugs too, without any bother.” So spake a young man who was henceforth to be the oracle for doctors’ boys, vicarage factotums, and the most experienced of village gardeners. Some of these shrewd folk shook their heads ominously; but that was always the mode in which the generality of mankind treated improvements. It only served to confirm him

in his views. The ground was therefore dug, and trenches drawn out for sowing—these trenches to be the grand improvement in early Pea culture; and rather more than twelve inches deep they were. In the Peas were cast, in the middle of November, and the beginning of January, and duly covered to the level; the depth securing them from early frosts, and the attacks of slugs into the bargain.

The worst of it was,—the Peas never got to the surface at all. When neighbours, that sowed much later, had theirs nicely above the ground; those sown so deep were found either to be rotten, or thoroughly eaten up by slugs and wire-worms; for these gentry, in weather at all cold, have the good sense to descend for warmth, and devour all that comes in their way. The soil being rather heavy aggravated the evil, as no air could possibly reach them, or but very little, at that depth and season of the year. If the Peas had been sown at a depth of from two to three inches, and a little rough ashes, or other matter, put along the rows as they got above the surface, they would have been secured alike from frost and slugs; and every good seed would have thrown up a healthy stem. If the frost were very severe, evergreen twigs might also have been added—or anything to blunt its intensity.

The evil of deep sowing is not confined to the open garden. One cause why seedsmen get such bad names, when seeds would not grow, is owing to too-deep covering, or placing them in soil so waterlogged, that, though they swell, the air cannot get at them, and decomposition is the result. Another cause why seeds saved by amateurs sometimes refuse to vegetate, is, that after cleaning they often are left in a place thinly spread out, and exposed to the full force of an autumn sun. The carbon, or starchy matter, becomes so fixed, or indurated, that it will not change into a sweet sugary substance for the nourishment of the embryo. I have known fine kinds of Cucumber seeds, much injured by full exposure to sun for months, or weeks, on the open shelf of a hothouse. A few days would have done them no harm.

As a general rule, small seeds in pots should seldom be more covered than the thickness of their own size. A little shading, before the seedlings appear, is far better than a thicker covering. In the case of all seeds, and especially those a little old, it is always safest to place them in soil a little moist, and to allow the seeds to absorb moisture from it gradually, instead of watering the soil. I once tried Peas a number of years old, in a box of nice light soil, in a medium state as respects moisture, just fit for potting, damp enough to retain the impress of the fingers when a handful was squeezed, but not so damp as to keep in a lump when you laid it on the potting-board; that box was merely patted on the surface, and a little moss put on it to keep it from drying more, and placed in a temperature of 60°. The greater part of the Peas grew. The other box was treated in the same way, only it got a good watering after sowing; and almost every Pea rotted, or produced a very sickly stem. Lately, one pot of Cucumber seed was sown, and not a seed vegetated. The seed was six years old. It got the common treatment. Another pot was sown, seed slightly covered, no water given, but the pot covered with a bell-glass, and shaded in the daytime to prevent the escape of moisture; and almost every seed came healthy and strong. The watering, in the first instance, when sown, did the mischief. In general cases, and especially in the case of all small seeds, the necessary moisture should be given by watering the pots well before sowing, after draining them well, and filling them with the light, sandy, proper soil, and then waiting a day or two for the soil in the pot to become a little dry on the surface before sowing. When covered afterwards, according to the size of the seed, and the mouth of the pot covered with a square of glass, and that shaded from sunshine before the young seedlings appear, hardly a good seed will fail to grow. Even then, careless watering overhead will ruin myriads of tender

things. It is safer to communicate moisture from below, or flood the surface by pouring the water on a piece of crock held close to the inside of the pot. The whole of the young tender things may thus be moistened without coming directly, as from a rose, on their tops. The previous moistening of the pots before sowing, in most cases of nicety, will supply the requisite moisture before the young seedlings are past danger. Care should also be taken in sowing tender things in pots, that the soil should be from a quarter of an inch to half an inch distant from the rim. When pots are filled more full than that, a careless rose-watering will often send the seed out of the pot. Frequently when I have found a pot empty of seedlings, I have got them in abundance among the ashes, &c., in which the pots were plunged. If these little matters are attended to, I feel confident that less blame will be thrown on the backs of seedsmen; most of whom make it a point of honour to do their very best for the gratification of their customers.

TRANSPLANTING AND PRICKING OUT.—When seeds are sown thickly in a bed out of doors, the young plants are injured when they stand long thick in the seed-bed, and are greatly improved by being pricked out,—such as Cabbages, &c., two or three inches apart in intermediate beds. This is even more necessary with all tender things, sown in pots, and placed in a higher temperature than the open air. If these are left long in the pot, and especially if at all thick and drawn up, however carefully watered, there is a great likelihood that many of the plants will rot and shank off at the surface of the soil. Mere thinning will not prevent the evil. The least carelessness will sometimes present you, on a morning, with a surface of slimy decaying matter, instead of the brisk little seedlings you admired yesterday. I have even had something of this, when, as I thought, I had seen that moisture, air, and a gradual hardening off were sufficiently attended to. I confess I have sometimes been nonplussed to assign the right cause for the disappointment. Pricking off, however, is the great preventive. In the case of small things—like Lobelias, Calceolarias, &c., there is no necessity to prick them individually; for, if moved in little tufts, and placed in other suitable soil, in pots, pans, or boxes, the danger of fogging off will be next to thoroughly obviated: and when these little tufts increase in size, then you can pick out the largest first, and thus go over them all ultimately. The chief requirement in these prickings out, is to have nice light soil, suitably heated before using. When watered, use water quite as warm as the temperature of the house and pit, and place the pricked-out plants, for a time at least, in as high a temperature as the seed-pots stood in. Where room is scarce, the pricked-out plants need not occupy much more space than the seed-pots, if thus pricked out in patches half an inch apart; and the greater safety of the seedlings will more than compensate for the labour. Even thinning the seed-pot, and stirring the surface of the soil, and covering it with charcoal dust, though useful processes, have not such a salutary tendency as pricking the plants off, either singly, or in little patches.

R. FISH.

(To be continued.)

NOTES UPON SEEDS.

ALLOW me to add my mite of praise for the valuable series of papers you are now publishing upon the "Science of Gardening." Practical horticulturists cannot be too thankful to the writer who thus places before them, in so intelligible, and, at the same time, entertaining a form, the theory of the operations they daily carry into practice.

I fully agree with the writer of those articles, that persons sending home seeds from abroad, should send them in canvass bags in preference to any other way; but there are some seeds which, it seems natural, should be sown as soon as they are ripe; and if the person abroad is sending home living plants as well as seeds, which is often the case, he cannot do better than sow these

in the soil of his Wardian Case. I refer particularly to Palm seeds. If these were sown in the Cases, they would have commenced germination before they reached our shores; whereas, if sent dry, they, in many cases, lose their vitality altogether. Our native Oak furnishes an example of a tree, the seed of which should be sown as soon as ripe; and there are many others to which this remark applies. On the other hand, many seeds keep their vitality for a very long time, even under ordinary circumstances,—this is especially the case with leguminous seeds. I have seen the seed of *Acacia*, &c., fully twenty years old, which, after soaking for a little time in warm water, grew freely.

But, to return to Palm seeds; these have a very peculiar way of germinating. They first throw out a thick fleshy root; after a time it splits on one side; and from this opening the young leaves spring forth. The connection of the seed continues until the hard shell is emptied of its contents, and then the part above the leaves shrivels up. The seed of the double Cocoa-nut (*Lodoicea Schelliarum*), weighing from ten to fifteen pounds, makes a root from two feet to two feet and a half long, and as much as four inches in circumference at a foot below the nut; but considerably smaller above and below. At this thickest part it splits longitudinally after some months, and the young leaf gradually makes its appearance. The plant continues attached to the seed for two or three years. In the seeds of *Calamus* and *Areca*, which are not much larger than Peas, the principle is the same, but on a proportionably smaller scale, and is effected in a much shorter time. The Cycads germinate in the same manner.

Xanthochymus and *Garcinia* throw the shoot from one end of the seed, and produce roots from the other, almost as though it were a tuber.

The seeds of all the species of *Nelumbium* will lie for months in water, if in their natural condition; but if slightly cracked with a hammer, or the hard shell worn down by rubbing on any rough surface until the albumen is reached, they will germinate in two or three days. I have even seen them start within twenty-four hours, if in sufficient heat. How do they germinate in their native localities? Some resident by the banks of the Nile, or the Ganges, might throw light on this interesting fact.

Streptocarpus Rexii throws up its two-seed leaves like any other dicotyledonous plant, and produces its young leaves from the centre in the ordinary way; but in *S. Polyanthus*, a very different operation occurs. In this species one cotyledon remains of its usual size, not larger than a pin's head; while the other continues to develop until it is a foot or fourteen inches long, by seven or eight inches wide. It makes no attempt, in its normal condition, to throw up other leaves from the centre; and the undeveloped cotyledon gradually withers away.

There is a great peculiarity about the seeds of *Collomia*. Noticing, that if placed in water, each appeared to be surrounded with a hazy circle of mucus, I placed a little piece of the testa, or skin, of one of them under a strong compound microscope. While dry, no unusual appearance presented itself, but the moment it was moistened with water, it began to throw out spiral threads in every direction, each thread being coated with mucus. Upon referring to the "Botanical Register," I find the subject thus mentioned under the title *Collomia linearis*:—"The genus, like several other genera of Polemoniaceæ, is remarkable for a mucous matter in which the seeds are enveloped. If the seeds are thrown into water, this mucus instantly swells and forms round them like a cloud, and in a short time acquires a volume greater than that of the seed itself. Upon examining the cause of this singular phenomenon, it will be found to depend upon the presence of an infinite multitude of exceedingly delicate and minute spiral vessels, lying coiled up, spire within spire, on the outside of the skin of the seed. When dry, these minute vessels are confined upon the surface of the skin by its mucus; but the instant the water is applied, the mucus dissolves, and ceases to counteract the elasticity of the spiral vessels, which then dart forward at right angles with the skin, each carrying with it a sheath of mucus, in which it for a long time remains enveloped, as if in a membranous case."—KARL.

CALCEOLARIA CULTURE.

IN your Number for February 22nd, appears an article on the above—a subject just now deeply interesting, as tending to throw light on the many failures of late in this valuable bedding plant.

I must own I do not quite understand your correspondent, who says, a portion of his success may be attributed to the aid

of the bog he obtains; yet he, in his directions for compost, strangely omits it altogether. The method of propagation, too, is somewhat novel—I allude to the use of waterproof pans. Surely he does not entirely subvert the acknowledged necessity of drainage? Or am I to understand, by waterproof pans, he uses pans internally glazed? Even this is at variance with custom, and requires some explanation; as thorough drainage is with me an absolute law.

Again. We are told the Calceolaria does not succeed in smaller sized pots than 36's. Numbers must greatly vary, or most gardeners, growing quantities of bedding plants, would find small chance of accommodating them. I have long grown Calceolarias, and am this year holding 1,900 in 60-sized pots; and I think I might challenge many to produce so clean, healthy a stock. Long may they continue so, as, with 9000 plants potted, I am glad to economise space.

Trusting that "J. H." will not deem anything I say uncourteous, I should feel obliged by a more explicit statement; and if any detail of my system can be of service to him, or others, I shall feel it a duty to my fellow gardeners to give it, greatly regretting the possibility of failure in so valuable a plant as the Calceolaria.—*CALCEOLUS.*

[We shall be obliged by a statement of your mode of culture.
—EDS.]

THE SCIENCE OF GARDENING.

(Continued from page 343.)

It may be accepted as a general maxim, that whatever causes an excessive development of root prevents the production of seed; and *vice versa*, the production of seed, especially in tuberous-rooted plants, reduces the amount of root developed. Thus, frequently transplanting the young plants of the Broccoli and Cauliflower causes the production of numerous fibrous roots, and is found effective in preventing the mature plants advancing early to seed. The early varieties of the Potato do not naturally produce seed; but if their tubers are removed as soon as they are formed, these early varieties blossom and bear seed as freely as the later kinds—a fact suggesting many experiments to the cultivators of shy-blooming tuberous-rooted flowers. Again, if the blossoms of those later varieties of the Potato are plucked off as they appear, the weight of tubers produced will be increased.

It is a common and very ancient opinion, that the roots of plants equal in extent that of their stems and branches. An opinion which we have already seen is fallacious in the case of plants growing in poor soils; and that it is a fallacy we shall have a future occasion to demonstrate.

That it was an ancient opinion is shown by these lines of Virgil—

"Esclus in primis, quæ, quantum vertice, ad auras
Aetherias, tantum, radice, in Tartara tendit."—*Georg. ii. 291.*

"The Chestnut especially, whose root descends as low towards hell as its head extends in the air towards heaven."

Virgil may have only intended his description as a poetical mode of describing the deep rooting of the Chestnut and the Oak; yet it is a popular error still, that the roots sink down as high as the stem rises, and spread laterally as far as its branches. In the case of the Oak, we may mention one instance to the contrary. The well-known Rev. W. Bree, of Allesley Rectory, took up a year-old, self-sown seedling Oak. It was growing in a wheat stubble. The plant, thriving and vigorous, was four inches high, while the root below measured thirty-four inches and a half.—(*Gardeners' Magazine*, x. 439.)

Although there is no equality of extent between the branches and roots of plants, it is most important that there is a reciprocity in their action. If the roots are excited into activity before the branches and their leaves—or if these become active before the roots are powerfully imbibing food—disease, in some form, is the consequence.

That this should be so, might be anticipated even by the least thoughtful; for, if the sap is impelled upwards before the leaves are prepared for its reception and digestion, there must be bleeding, or other organic derangement; and if the leaves are developed before the root can supply them with sap, there must be gangrene, or decay, from the want of sustenance. Practice shows these events; and the best gardeners always take care, when forcing fruit, that by borders well drained and proportionately heated, the roots of the trees shall be growing and imbibing from the

soil quite as soon as the buds begin to swell. It is useless to apply heat to the surface of a wet, undrained border; because the water with which it is charged will not conduct the heat downwards. On the other hand, if the border is well freed from stagnant moisture, heat applied to the surface will descend with sufficient rapidity. On this point we shall have occasion to speak more fully, and shall here only add a quotation from a recent communication from that scienced practitioner, Mr. Fish.

"I have found," he says, "that from twelve to fifteen inches of fermenting matter, such as tree leaves, will be sufficient to give a heat on the border, in moderate weather, of about 70°, three inches below the surface; 68° at the depth of six to eight inches; 66° at the depth of a foot; and about 57° at the depth of two feet—a heat quite as great as the roots would have in general seasons in summer from natural causes; and, therefore, when forced, placing the roots, as respects heat, in something like a natural position. These temperatures will vary according to the weather, and the state of the border, especially as respects freedom from stagnant moisture; but they will be found pretty near the mark on an average. The thermometers, if possible, should be placed in open tubes or drains, communicating with the end or front of the border, the end of the drains being shut; and then the thermometers will not be influenced by the fermenting matter placed over the border, farther than that communicates heat downwards.

"As heat rises most naturally, I cordially agree in the propriety of a heating medium in a chamber, or other contrivance, below the border—such as hot-water pipes—so that there would be no possibility of the roots coming in direct contact with the heating medium. But even then, for early forcing, there would be a necessity for littering the border, or covering it with glass, or some non-conducting medium, as wood, or asphalt shutters; or, in severe weather, there might be a very great difference between the heat at the bottom and the surface of the border. In unison with such border protection, one of the finest vineeries I ever saw, had most of the heating surface in a chamber below the border,—the necessary heat for the atmosphere of the house being admitted by slides. In such a mode of heating, the border should not be too deep, as the heat will attract the roots down. On the other hand, throwing in a little heat from the surface will help to entice the roots upwards."*

(To be continued.)

GOLDEN CEDO NULLI CHRYSANTHEMUM.

A MISUNDERSTANDING appears to have arisen in consequence of some observations which appeared in THE COTTAGE GARDENER, page 162, of the December Number. I beg to state, that the Chrysanthemum there noticed as being very like the *Golden Cedo Nulli* was sent to me, and planted in my garden, to ascertain its merits. By many persons it was considered to be similar to those at St. James's Hall; but at the latter end of the season it proved a different variety, and inferior to the *Golden Cedo Nulli* exhibited by Mr. Bird.—JOHN SALTER, *Versailles Nursery, Hammersmith.*

MEASURING THE HEIGHT OF TREES.

ONE of your correspondents asks how to find the height of trees, &c. The following plan is the *ne plus ultra* of simplicity:—

Cut a triangular board to an angle of 45°; support the base of it on a stick at the height of your eye, placing a common level along its base, to keep it horizontal. Then walk away from the tree, taking the whole apparatus with you, till your eye, looking up the sloping side, strikes the topmost twig. The distance from your stick to the tree's base, measured along the ground, *plus* the height of your eye from the ground, is the total height of the tree.—CRUX.

P.S.—A clever fellow will see how to make a plummet and line do instead of a level.

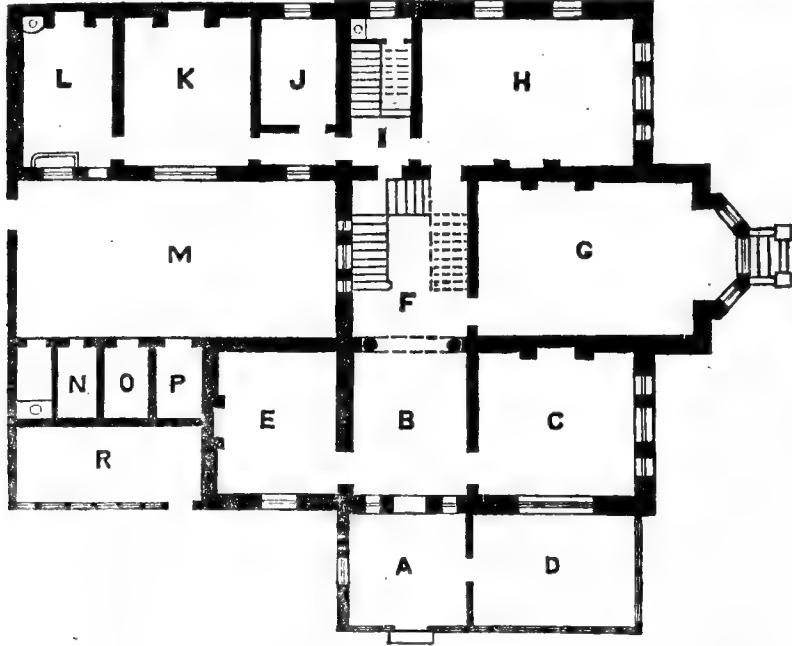
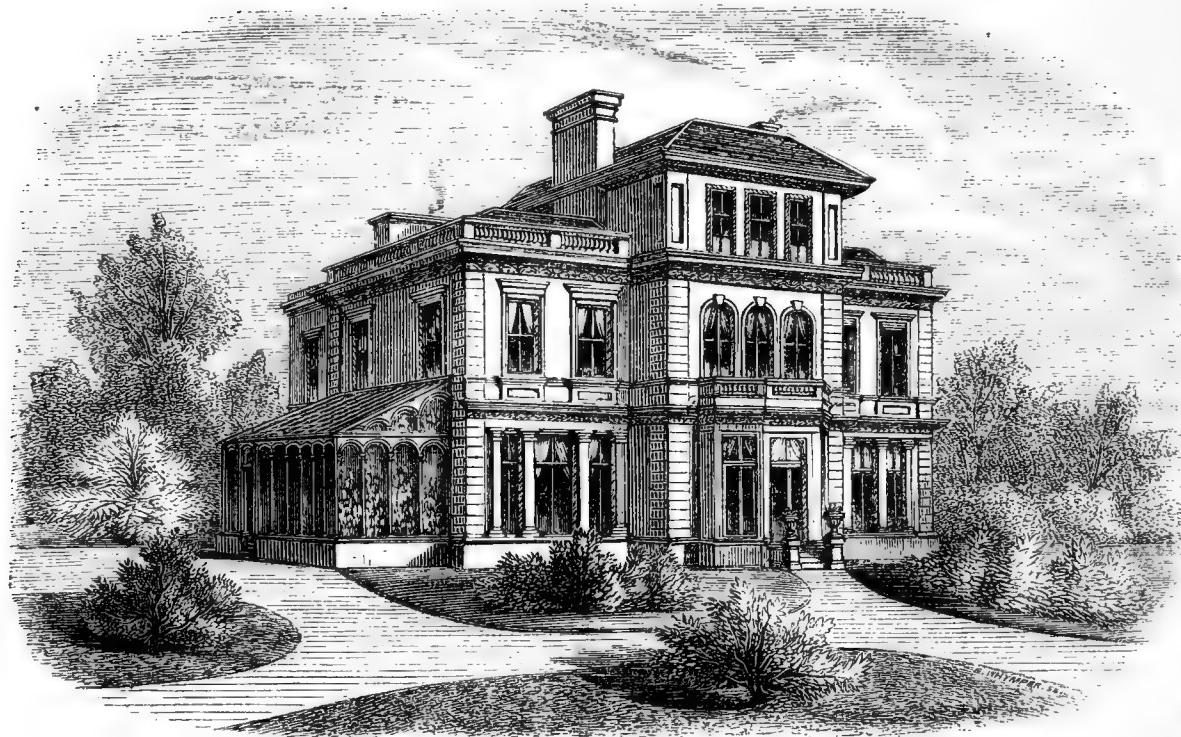
MILDNESS OF THE SEASON.—We have just seen a wild Strawberry in blossom, and with one fruit perfected, which had been picked on the 25th of February, near Ryde, in the Isle of Wight!

* In *Aenid iv.*, Virgil says exactly the same of the Oak.

We recommend, for attentive perusal, the entire essay from which this is extracted. See COTTAGE GARDENER, No. 542.

RURAL DOMESTIC ARCHITECTURE.

DESIGN FOR A COUNTRY HOUSE.



THE design contained in this week's number (in continuation of our series of illustrations of rural architecture) is in the Italian style, and considerably larger than the one first illustrated; and, from the size and number of its rooms, would be appropriate for a gentleman of independent means, and should stand in grounds of suitable extent.

With regard to the style of architecture most adapted to the country, there is, at present, a great difference of opinion. Some maintaining that the Gothic style alone ought to be employed, as that, which, from its freedom of outline, and absence of formality, harmonises best with the surrounding objects of nature. On the other hand, the admirers of Italian architecture contend that their style is more symmetrical, and is also better adapted for internal convenience. This, however, is stoutly denied by the other party, and justly so; for it has been again and again demonstrated, that there is just as much convenience in a well-planned Gothic house, as in an Italian one of the same size. The question, then, resolves itself into a matter of taste; and so

long as men's minds are differently constituted, it seems likely there will never be perfect unanimity on this subject.

On referring to the plan, it will be seen that the house is entered through the porch (A), which is a continuation of the conservatory (B). By this means the house will be effectually protected from draughts, and persons alighting from carriages can be immediately under cover. Through the porch you enter the hall (C), 12 feet by 16 feet, separated from the inner hall (F) by a screen of columns and pilasters. This inner hall is 17 feet by 12 feet, and is lighted by a large arch-headed Venetian window, and contains the staircase, which is 4 feet wide. To the right of the hall (C) is the parlour (D), 16 feet by 17 feet, with a large three-light window looking over the garden, and one of similar size opening into the conservatory. This being the general sitting-room, the object has been to make it the pleasantest room in the house. At the left of the hall is the library or study, (E), 16 feet by 13 feet. Opening out of the inner hall is the drawing-room (G), 17 feet by 23 feet, with a large bay window,

giving 5 feet additional length. Beyond the drawing-room is (n) the dining-room, 16 feet by 23 feet, with a similar window to that in the parlour at the end, and two smaller ones at the side. There is also an additional door at the end of the room; so that the inconvenience of bringing the dinner through the hall is entirely obviated. I is a lobby, 6 feet wide, containing the servants' staircase. J is the butler's pantry, 8 feet by 11 feet 6 inches. K is the kitchen, 16 feet by 15 feet, with a large window looking into (m) the yard, or kitchen-court. L is the scullery, 16 feet by 11 feet. N is for dust. O the knife-house. P for coals or wood, and R a small greenhouse. The space beneath the dining-room is supposed to be excavated for wine and beer cellars, approached by a staircase under that of the servants'. On the first floor there are four best bedrooms, and two dressing-rooms, one of which might be converted into a bathroom, and two servants' bedrooms. On the second floor, which only includes the central portion of the building, there are two large bedrooms.

The rooms throughout the house are lofty. Those on the ground floor being 12 feet high; the first-floor rooms 10 feet 6 inches high; and the upper rooms on the second floor 9 feet 6 inches in height.

The house is supposed to be faced externally with white bricks, and Bath or Portland stone dressings; or, if the expense of stone were objected to, they might be executed in Portland cement. In this latter material the house could be built for about the sum of £2,800.—CHARLES LUCK, Architect, 16, Essex Street, Strand.

NEW OR RARE PLANTS.

FUCHSIA SIMPLICICAULIS (*Slightly-branched Fuchsia*).

SENT from Peru to Messrs. Veitch, by their collector, Mr. W. Lobb. Bloomed in October, 1858. Flowers "rose scarlet," large, and beautiful.—(*Botanical Magazine*, t. 5,096.)

AGAVE JACQUINIANA (*Jacquin's Agave*).

Called also *A. lurida*; and *A. Vera Cruz*, by Miller in his "Dictionary." Received from Honduras. Flowered in the Kew Palm House, in the autumn of 1858.—(*Ibid.*, t. 5,097.)

HIBISCUS RADIATUS var. FLORE PURPUREO (*Purple-flowered rayed Hibiscus*).

Common in the Calcutta Gardens, but raised from seeds received from Mr. Wilson, superintendent "of the late Botanic Garden at Bath, in the Island of Jamaica. I say *late*, an awful avalanche of stones having recently overwhelmed the Garden."—(*Ibid.*, t. 5,098.)

DASYLIBIUM HARTWEGIANUM (*Hartweg's Dasylirium*).

Called also *Cordyline longifolia*. Native of Mexico, with a gigantic caudex of root.—(*Ibid.*, t. 5,099.)

PHYLLOCACTUS ANGULIGER (*Angle-stemmed Phyllocactus*).

Native of western Mexico. Blooms in the winter. Flowers large, white, and very fragrant.—(*Ibid.*, t. 5,100.)

BEGONIA REX (*Royal Begonia*).

"Certainly the most lovely of the many lovely species of Begonia." Native of Assam. "Flowered in the autumn; but, probably, with a little management, the blossoms may be produced at most seasons." Flowers pink, but the leaves are its most striking feature. They are ten, or more, inches long, and six, or more, inches broad, deep green, with a metallic lustre, and towards the margin tinged with purple. The dark green surface is interrupted by a broad band of a dead silvery white, which is nearer the edge than the midrib, and passes round the leaf.—(*Ibid.*, t. 5,101.)

FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 342.)

GOOSEBERRIES.

HAIRY RED (Barton's).—Small and roundish. Skin thick, red, and slightly hairy. Briskly and well flavoured. Bush erect, and an excellent bearer.

Hall's Seedling. See *Whitesmith* (Woodward's).

HEART OF OAK (Massey's), L.P.—Large and oblong, tapering to the stalk. Skin thin, green, with yellowish veins. Rich and excellent. Bush pendulous, and an abundant bearer.

HEBBURN PROLIFIC.—Medium sized, roundish. Skin rather thick, dull green, and hairy. Very rich and sweet. Bush erect, with broad, thick leaves, and an abundant bearer.

HEDGEHOG.—Medium sized, roundish. Skin thin, white, and hairy. A richly-flavoured variety. Bush erect; the shoots thickly set with small briskly spines. This name is also applied to Glenton Green, in Scotland.

HUSBANDMAN (Foster's), L.P.—Large and obovate. Skin yellow, and downy. Of second-rate quality. Bush erect.

INDEPENDENT (Brigg's), L.P.—Large and obovate. Skin green and smooth. Of second-rate quality. Bush erect, and a good bearer.

INVINCIBLE (Heywood's), L.P.—Large and roundish-oblong. Skin yellow, and downy. Of second-rate quality. Bush erect.

IRISH PLUM.—Medium sized, roundish. Skin dark red, and hairy. A first-rate dessert sort. Bush erect.

IRONMONGER (*Hairy Black*).—Small and roundish. Skin red, and hairy. A first-rate variety, of excellent flavour, but inferior to Red Champagne, which is also known under this name chiefly in Scotland; and from which it is distinguished in having rounder and darker red fruit, and a spreading bush—that of the Red Champagne being erect; leaves downy.

JOLLY ANGLERS (Collier's), L.P. (*Lay's Jolly Angler*).—Large and oblong. Skin green, and downy. Of first-rate quality, and a good late sort. Bush erect.

JOLLY TAB (Edwards'), L.P.—Large and obovate. Skin green, and smooth. Of first-rate quality. Bush pendulous, and a good bearer.

KEENS' SEEDLING (*Keens' Seedling Warrington*).—Medium sized, oblong. Skin brownish red, hairy. Of first-rate quality. Bush pendulous; a great bearer, and earlier than Red Warrington.

LANCASHIRE LAD (Hartshorn's), L.P.—Large and roundish. Skin dark red, and hairy. Of second-rate quality. Bush erect, and a good bearer.

Lancashire Lass. See *Whitesmith* (Woodward's).

LAUREL (Parkinson's), L.P. (*Green Laurel; Green Willow*).—Large and obovate. Skin pale green, and downy. A first-rate variety, somewhat resembling Woodward's Whitesmith. Bush erect, and a good bearer.

Lay's Jolly Angler. See *Jolly Anglers* (Collier's).

LORD COMBERMERE (Forester's), L.P.—Large and obovate. Skin yellow, and smooth. Of second-rate quality. Bush spreading.

MAGISTRATE (Diggles'), L.P.—Large and obovate. Skin red, and downy. A first-rate variety. Bush spreading.

MISS BOLD (*Pigeon's Egg*).—Medium sized, roundish. Skin red, and downy. Of first-rate quality, and early; it somewhat resembles Red Walnut, but is better. Bush spreading.

Moss' Seedling. See *Red Warrington*.

Murrey. See *Red Walnut*.

Nonpareil. See *Green Walnut*.

Nutmeg. See *Raspberry*.

OLD ENGLAND (Rider's), L.P.—Large and roundish-oblong. Skin dark red, and smooth. Of second-rate quality, resembling Wilmot's Early Red. Bush pendulous.

Old Preserver. See *Raspberry*.

OVER-ALL (Bratherton's), L.P.—Large and oblong.

Skin red, and hairy. Of second-rate quality. Bush pendulous.

PASTIME (Bratherton's), L.P.—Large and roundish. Skin dark red, and hairy. Of second-rate quality. The fruit is often furnished with extra bracts attached to its sides. Bush pendulous.

PERFECTION (Gregory's), L.P.—Large and roundish. Skin green, and downy. A first-rate variety, and late. Bush pendulous.

Pigeon's Egg. See *Miss Bold*.

PITMASTON GREEN GAGE.—Small and obovate. Skin green, and smooth. A first-rate variety, very sugary, and will hang on the bush till it becomes shrivelled. Bush erect.

PRINCE OF ORANGE (Bell's), L.R.—Large and oblong. Skin yellow, and downy. Of second-rate quality. Bush pendulous.

PRINCE REGENT (Boardman's), L.P.—Large and roundish. Skin dark red, and smooth. A second-rate variety. Bush spreading.

PRINCESS ROYAL, L.P.—Large and obovate. Skin greenish-white and hairy. Of first-rate quality. Bush pendulous, and a good bearer.

PROFIT (Prophet's), L.P.—Large and oblong. Skin green and downy. Of second-rate quality. Bush spreading.

QUEEN CAROLINE (Lovart's).—Medium sized, obovate. Skin white and smooth. Of second-rate quality. Bush erect.

RASPBERRY (*Old Preserver; Nutmeg*).—Fruit small, roundish-oblong. Skin thick, dark red, and hairy. Richly flavoured and sweet. Ripens early. Bush spreading, and a good bearer.

RED CHAMPAGNE (*Dr. Davies' Upright; Countess of Errol; Ironmonger*, in Scotland).—Small and roundish-oblong, sometimes tapering towards the stalk. Skin rather thick, light red, and hairy. Flavour very rich, vinous, and sweet. Bush very erect, and a good bearer. This is known in Scotland by the name of "Ironmonger."

RED MOGUL.—Small, and roundish-oblong. Skin thin, red, with a mixture of green, and hairy. Of first-rate quality. Bush spreading, and a good bearer; leaves smooth, by which it is distinguished from Ironmonger.

RED OVAL, L.P.—Large and oval. Skin red, and hairy. Of first-rate quality. Bush spreading.

RED WALNUT (*Murrey; Eckersley's Double-bearing*).—Medium sized, obovate. Skin red, and downy. An early variety. Of second-rate quality. Bush spreading.

RED WARRINGTON (*Aston; Aston Seedling; Volunteer*).—Above medium size, roundish-oblong. Skin red, and hairy. A first-rate late variety, and highly esteemed for preserving. Bush pendulous.

RIFLEMAN (Leigh's), L.P. (*Alcock's Duke of York; Yates' Royal Anne; Grange's Admirable*).—Large, roundish. Skin red, and hairy. A first-rate late variety. Bush erect, and a good bearer.

RINGLEADER (Johnson's), L.P.—Large and oblong. Skin red, and smooth. A second-rate variety. Bush pendulous.

(To be continued.)

QUERIES AND ANSWERS.

STEPHANOTIS FLORIBUNDA CULTURE.

"At the end of my greenhouse, looking north-west, I have a *Stephanotis floribunda*, which has looked very nice all the summer; but the frost has cut it down a week or two since to within nine inches of the ground. I cut it down as far as it was killed, and repotted it. Have I done right? Should I put it into my

Cucumber-house until it begins to grow again?"—A CONSTANT READER.

[You will do little good with this Madagascar plant in a common greenhouse, even though frost be excluded, and the plant kept as dry as is consistent with the leaves remaining in a succulent state. We once grew it in a conservatory where plants were kept in bloom in winter, night temperature ranging from 45° to 50°, and a fair rise from sunshine when it could be had, and here the plant did very well, flowering nicely in summer; but when the temperature of the house was lowered, merely to keep the plants in it safe from frost, the Stephanotis began to give way, one branch dying after another, until at length the stem and roots also went. Even, therefore, if the frost had not been admitted, we would not have held out sanguine hopes of success, unless the greenhouse were kept warmer than usual. We should almost fear, if the top were so much frosted as the leaf sent, that the roots also must have been injured. If not, you did quite right in placing the plant, with its pot, in your Cucumber-frame; but it should have had the coldest corner where a fair amount of air could be given, and the pot should have stood on the surface, and not been plunged; on the principle of not suddenly presenting even the roots to two extremes of heat and cold. On the same principle, unless the soil about the roots were in a sodden, waterlogged state, we would not have repotted the plant before placing it in the extra heat; but would have deferred that operation until, if the base of the stem and the roots being right, fresh shoots should have been protruded. The frosting and cutting down gave a severe check to the system of the plant; the repotting, however done, would give another check, and thus, in the case of all plants in pots, it is sound policy to give only one of these checks at a time; so that, when the top of a plant is pruned back, the roots may have full power to assist in the protrusion of fresh shoots; and then, when these are growing, the young leaves will, by a relative action, assist in the forming of fresh rootlets. If your plant should not recover so as to please you, you had better substitute in its place, *Mandevilla suaveolens*. The Stephanotis will bloom well in a greenhouse in summer; but it should seldom be below from 45° to 50° in winter.]

CINERARIAS BLOOMING PREMATURELY.

"I wanted large flowering plants of these in May, but they are now throwing up their flower-stalks; and I am told that if I cut these down and repot, the umbels of bloom are not likely to be so good. What can I do?"—NEMO.

[You have so far been told correctly. Still, we have had fair plants from cutting down, or pinching back, at an early period; and if thoroughly resolved to try—we would not say farther than that—the stalks of flowers are not likely to be so uniform as they would have been, had the flower-stalks appeared a month or six weeks later. Your error, we presume, was delaying to repot into larger pots. The Cineraria is one of the most easily guided plants we have. It will invariably make a great effort to throw up its flower-stalks, when grown in pots, whenever the roots are curbed for want of room, whether the roots are growing in a pot of twelve inches, or of three inches in diameter. The best specimens in twelve and eight-inch pots are procured by such timely repottings. The roots are never permitted to press much and firmly against the sides of the pot until they have been transferred to their last pot; and then, shortly after that event, the flower-stalks begin to appear. Then is the time, and not before, to assist the plants with a little manure-water; and, if possible, more air and coolness, that the flower-stems may be strong and stubby.]

GREEN FLY ON CALCEOLARIAS.

"I have given my plants plenty of tepid water, and enough of fire heat to keep them from falling below 45°. I have also syringed them freely, and yet they are covered with green fly. What am I to do?"

[We hardly know; because, after the fly has obtained such possession, it is frequently the most economical thing to get rid of the whole—plants, fly, and all. If not so very bad, the first thing is to smoke them with shag tobacco, or tobacco paper; taking care that the smoke is not hot, and that the sun does not strike the plants forcibly the next day. You must smoke two or

three times afterwards, at an interval of two or three days, and then you may escape from this locust infliction. If you syringe between the smokings, or water should be wanted, use the coldest you can get, if not below 38°; and give abundance of air when the fumes of the tobacco have escaped. Continue giving this abundance of air, and use cool water for watering; as the least coddling with warm water, or warm dry air, will bring back your green enemies again in myriads. It is very likely you owe your infliction to warm air and warm water.]

MUSHROOMS IN A CUCUMBER-HOUSE.

"In a Cucumber-house, I have got a narrow pit, or border, eighteen inches deep, eighteen inches wide, no bottom heat. Would you tell me if I could grow some Mushrooms in it, or what other things would grow, and how to grow them?"

[We have grown Mushrooms in houses of all kinds; but without scheming, a Cucumber-house is most unsuitable for them. If the Cucumbers are long kinds, the temperature of the atmosphere necessary will be from 65° to 70°, even at night. The Mushrooms, as respects their atmospheric temperature, should seldom be higher than from 55° to 60°, and a few degrees higher at the very most. It is not likely, unless in particular circumstances, that Mushrooms and Cucumbers would thrive together. We are quite at a loss to say what this narrow pit would be best for, unless we knew its position, and what was most required. If we had a section of the house, we might then judge. Our correspondent writes as if we knew as much of the house as he does himself. With this information we will then do our best. To return to Mushrooms. We may mention we have grown them in all kinds of forcing-houses; but then, when the heat of the atmosphere got high, they get thin and lean, unless care were taken to keep them cool by a thin covering of hay, or of moss, which, from being kept constantly moist, lowered the surface heat of the bed by evaporation. By this means we have sometimes had a supply, from a bed on the floor of a viney, until they would come better in a shady place, in July and August, out of doors. Sometime ago, we were asked advice about a house that was arched most of its width in front, in order to support a platform for growing Cucumbers in the winter and spring months. A tank was placed on the top of these arches, so as to give bottom heat to the soil, and atmospheric heat to the house. The space behind these arches formed a good wide pathway. The Cucumbers covered the whole roof when in bearing. Each arch was shut in by a boarded shutter, in two pieces, that at the bottom to the depth of eighteen inches fixed; that above, for two feet to the crown of the arch, moveable. Beneath these arches there was generally a difference of from 5° to 10° of temperature, and that in the air of the house at night, and much more during the day; and there, with little trouble, Mushrooms came thick and fleshy; and Sea-kale and Rhubarb, and even Asparagus, forced beautifully in winter and early spring. The only thing required with the last, was the necessity of cutting it for several days before using, and placing the ends in tepid water, in the house, full in the light, that it might look green at table. If by such means, or from the bed being a long way from the glass, and the possibility of keeping the surface cool, by a thin covering of a damp moss, then our correspondent may try; but even then, at this season of the year, when the sun gains so much power, we would much rather incline to make a bed in a shed, or out of doors, and secure warmth by covering.]

STATICE HOLDFORDII CULTURE.

"AN OLD SUBSCRIBER' wishes to know the treatment of *Statice Holdfordii*. Her gardener has a young plant which has been through the winter at the warmest end of a greenhouse. Its leaves are drooping, and the newest leaves are of a pale buff colour. It is evidently in bad health. What is to be done?"

[Most likely the reasons are, over-potting and a soured soil, arising from stagnant moisture, and more about the roots than they are able to use. Extra moisture and a soured soil, in such dull weather as we have passed through this winter, would be ruin to such a plant; as the leaves would receive little excitement to perspire, and so get rid of the redundant moisture. If any such symptoms exist, the worst leaves may be removed; the soil carefully removed from the roots, which is best done by holding the ball in your hands in a pail of water, about 65°, and gently squeezing until all the earth is removed. You can see then every

root clearly; and if any are decayed, cut them away with a clean knife. Repot them into as small a pot as the roots can be put into, using a compost of about equal parts of fibry loam, fibry heath soil, sand, broken little bits of charcoal, and broken pots. Let this be in good potting order—neither wet nor dry. The roots from this process will be well charged with moisture, and, therefore, give little or no water at first. If the pot could be plunged in a temperature of from 65° to 70° for three weeks or so, the plant would root all the sooner. A little air must be given at the top, and the leaves gently dewed and shaded in sunshine; but little moisture given to the roots until fresh growth is commencing. When that is going on freely, the plant will want watering, and, ere long, repotting in similar material, with extra drainage; and, by-and-by, will stand the common treatment of the greenhouse; care being taken to use pots rather under than over-sized, open compost, and careful watering, according to the weather and the state of the plant.]

SOWING SEEDS OF SOME TENDER PLANTS.

"Will you give me a few hints relative to sowing and raising the following plants from seed:—*Achimenes*, *Ardisia crenulata*, *Gesnera elongata*, *Gloxinia*, and *Hibiscus Manihot*?"—H. S.

[This will be mostly met by a recent article; but we will just glance at the plants mentioned.

Achimenes.—Seeds small, vegetate best in a moist, sweet hotbed. Prepare seed-pans or pots with good drainage, and a fine surface over rougher compost; water, and allow all to drain for twenty-four hours; smooth the surface; sow; scatter a thin covering, and press slightly again; cover with a square of glass, or a piece of paper, or both, until the seedlings appear; when gradually expose to full light, and a little air, to prevent drawing; and prick off as soon as you can catch them between the finger and the point of a small bodkin-like dibber. Use similar soil, and a similar position. If sown early, many will bloom the same season. If the roots of these are kept in any place free from frost, they may be excited early in heat in any place, or may be started in May and June, in a cold pit, where the glasses are kept shut, to retain sun heat, and thus give them a vigorous start. The heat of such a place, with a fair amount of air, being warm enough for them in the summer months. So long as either seedlings, or established plants, remain in a hotbed, care must be taken that the steam or heated moisture from such a bed, and the sun's rays, never strike the plants at the same time, or scalded and curled leaves will be the consequence. Early air-giving, or early shading, or both, must, therefore, be had recourse to.

Gesnera elongata, and *Gloxinia*, will do under precisely the same treatment. We have had beautiful Gloxinias in bloom in autumn from a spring sowing. The young leaves of these are also easily injured by steam from a hotbed, however sweet, unless air is given early in the morning. In fact, it is safest to leave a little on constantly at the top of the light. A little shade in bright sun will also be an advantage.

Hibiscus Manihot.—Is easily raised in a hotbed, and the seedlings should be potted off when a few inches in height. Fibry loam, and a little peat, will grow it well. It wants abundance of water when growing, and very little when in a state of rest. If treated as an herbaceous plant, when the flowering is over, and the stems looking shabby, they may be cut pretty well down, and the plant kept out of sight, until fresh growth commences; when it may be fresh potted, and given the advantage of full exposure to light.

Ardisia crenulata.—If the pretty, crimson, cherry-like fruit, with all the flesh about them as you gather them, are sown in a pot of soil, and covered a quarter of an inch, and allowed to stand anywhere in heat, you will get plenty of young plants in time. If you would like to have the plants as soon as possible, place the berries in water, and wash off all the fleshy part from the stones. When clean, place them in water for twenty-four hours, at a temperature about 100°; then sow, and cover as above, and plunge the pot in a hotbed, and you will soon have nice stubby seedlings; which should be pricked out, four or five round the sides of a four-inch pot, and kept in the same place. In a month or six weeks, each of these will want a pot for itself. Give the plants, when young, equal portions of fibry peat, loam, and sand; but, as they advance in years, let the fibry loam gradually preponderate, and the plants will be more stubby and more closely covered with their insignificant flowers, followed by beautiful crimson fruit.]

SHELTER FOR WALL TREES—CUTTING PANS.

As the season for sheltering wall trees, whether from sunshine or frost, is upon us, and some brother cottagers may be unprovided with the needful appliances, I send you a description of what I use; in order that, if you consider it in any way useful and novel, it may be suggested to them.

Let me premise the requirements I had to meet, and which experience proves to have been attained, were facility of construction and of application; and in use, economy, sightliness (my trees being in full view from the drawing-room window), and one more quality, which, for want of a word ready made, I will simply call “stow-away-when-done-with-ability.”

On the top of the wall, which is five feet eight inches high, I mark a point over the centre of my tree; at eighteen inches on each side of that point I drive a wooden plug between the bricks, two inches in, from the front of the wall; and at three feet from these plugs, on each side, another. Into these plugs I drive four common wall hooks, upright, with the hooks pointing backward—*i. e.*, from the face of the wall. These distances are taken at an inch, more or less, as the joints of the brickwork fall. Next, I plane the rough off a twelve-foot inch board; and laying the edge of it against the wall hooks, so that each end extends eighteen inches beyond the outside ones, mark the points of contact, and there screw in four stout iron eyes. The board then has three coats of paint, two lead and one green; and being hung by the eyes, it stands out from the wall at a good slope. But to keep it firm, I have props or legs nine inches long, made of stout iron wire, which swing upon eyes screwed into the under side of the board at each end, just within its outer edge; and their points are “jobbed” into the mortar of the upper course of bricks, where the weight of the board keeps them secure, while they prevent its straining on the hooks. In an exposed part of the wall, where I fear south-west winds, I tie the board down by a string passing from the eyes, upon which these legs swing, to other eyes driven into the wall, where they rest upon it. This completes the top shelter.

I take eight yards of canvass, which, cut in half, give two pieces, each the length of my board. These are sewn together, and nailed by their selvages to two pantile laths, which also run twelve feet long. On one of these laths are screwed four brass rings at the distances described for the wall hooks, only very exactly; and four brass round hooks are screwed into the under side of the board, to correspond, fully four inches within its outer edge. When the lath is hung upon these hooks, the lower lath keeps the canvass neatly distended, and enables you to roll it up tightly, and smoothly, in much less time than half a minute. When so rolled up, completely under shelter of the board, the canvass is held there by two straps of leather eight inches long, through one end of each of which the middle brass hooks are screwed: the other end has a button-hole cut in it; so that, when it encircles the roll of canvass, it is buttoned upon the same hook that screws it to the board. To prevent the canvass chafing the blossoms off, I put four sticks slantingly against the wall, their points into the ground. Two pantile laths, halved, make them; and a rub of green paint improves them. This completes the apparatus.

The cost of this shelter to twelve feet of a six-foot wall is—

	s. d.
One board, twelve feet by nine inches.....	1 6
Four wall hooks.....	0 3
Two legs (iron wire shut into screw eyes) ...	0 3
Paint	1 0
Eight yards of canvass, at 2½d. per yard ...	1 10
Four pantile laths, at 2½d. each	0 10
Tacks, thread, and leather.....	0 4
Four small brass hooks and rings	0 3
	6 3

And as a number made at once would come a little cheaper, you may say 6d. per foot run.

I cannot put down anything for labour, as I plane and paint the board myself, and Mrs. Green Hand does the sewing for a consideration, which cannot be reduced to figures, but which it is quite a pleasure to pay. The canvass (which I hunted all over London for) may be had in any quantity of Mr. Hyde, Old Fish Street, Doctors' Commons. I have just put up mine for the third season; the canvass is as sound as when new. It took me, as near as I could calculate, a quarter of an hour to erect the shelter to each tree.

When done with for the season, as shelter, the boards are laid

upon angle irons nailed to the wall of an outhouse; and, as shelves, afford me an immense deal of room to stow Carnations, Chrysanthemums, and other hardy things, which I keep in pots through the winter. The canvass, carefully dried and rolled up on its laths, is slung to a range of hooks in the ceiling, and the wall laths either go with them, or get used as supports for Roses, &c. This is what I call “stow-away-when-done-with-ability.”

Apropos of stowage, I must mention a most excellent invention which I have seen advertised in your columns—Messrs. Adams' square pans. In my liliputian frames and greenhouse, the room they save is invaluable; but it is most at this current time I find their benefit, in giving a proportion of room to place cuttings *next the pot-side* (compared to the common pan), as four to three; and I can stow almost as largely increased a number of pans in my frames. This is a saving which genuine “cottagers” must appreciate. I hope you will excuse my calling attention to it; for I dare say your advertising columns are not read by all quite so attentively as they are by—A GREEN HAND.

BRITISH POMOLOGICAL SOCIETY.

A MEETING of the BRITISH POMOLOGICAL SOCIETY was held at St. James' Hall, Regent Street, on Thursday last, Robert Hogg, Esq., Vice-President, in the chair.

Several new members were elected.

On the tables were exhibited the best and the largest collection of fruits, for this late season of the year, we have ever seen—there being upwards of 120 dishes in all. Foremost among them was that of Mr. Rivers, of Sawbridgeworth, who had forty sorts of Apples and fifteen sorts of Pears. There were also excellent collections from Mr. Cox, of Redleaf; Mr. McLaren, of Cardington; Mr. Holder, of Reading; Mr. Newton, of Enfield Chase; and numerous others; but, as we have not space to give a full report of the Meeting this week, we shall notice both the exhibitors and the exhibitions in a subsequent paper.

An oval-shaped Black Grape, with a very thick skin, was sent by the Archbishop of Armagh, and was in excellent keeping condition. It was agreeably flavoured, and had that glutinous flesh round the stone, so remarkable in the native American Grapes.

The object for which the Meeting assembled was to decide on the best and second best-kept collections of fruit. The first prize was awarded to Mr. Cox, of Redleaf, and the second to Mr. McLaren, of Cardington. In reference to the latter, the Secretary stated to the Meeting, that of all the fruit that comes to these Meetings, Mr. McLaren's is the most carefully labelled and packed, and gives less trouble than many of the collections usually do. It might be worth while to remark, that the manner Mr. McLaren adopts for labelling, is that of writing the name on a strip of paper, and pasting it on the fruit,—a practice censured by a cotemporary after the Meeting at Willis' Rooms, but, nevertheless, approved by the Pomological Society.

Mr. Newton, of Enfield Chase, offered a prize next autumn for the best dish of Cornish Gilliflower Apple, and at the same time declines to compete himself.

CARTER'S FLORAL ILLUSTRATIONS.

THE literature and art of Messrs. Carter's establishment may safely aspire to a respectable position in the literature and art of gardening. Their catalogue which we recently noticed, and which, no doubt, is now in the hands of most of our readers, is a model of its kind: and now we have before us, Nos. 5 and 6 of “Carter's Floral Illustrations,” which, for execution and beauty, can compare with any floral illustrations of the day. The former consists of a group, representing:—1. *Lagunaria vittata*. 2. *Cenothera bistorta Veitchii*. 3. *Nolana paradoxa violacea*. 4. *Gaillardia hybrida grandiflora*. 5. *Lupinus Hartwegii coeruleus*. 6. Dwarf-spotted Nasturtium. 7. *Fenzlia dianthoides*. 8. Carter's Tom Thumb Nasturtium. In No. 6, there is also a beautiful group, consisting of:—*Cosmidium Burridgii*. 2. *Viscaria Dunnettii*. 3. Rose Balsam. 4. *Lupinus nanus albus*. 5. Dwarf German Stock. 6. Scarlet Balsam. 7. Purple ditto. 8. *Lobelia formosa*.

TO CORRESPONDENTS.

LOBELIA RAMOSOIDES SEEDING (*J. Farnsworth, Longdon*).—Our correspondent says, “it has seeded with me these two last years,” and has sent us some of the produce, which we shall sow, and see who is right and who is wrong about this Lobelia producing seed in England. There are

two Longdons in Shropshire, two in Staffordshire, and two in Worcester-shire, and our correspondent does not specify which is his whereabouts.

HYBRID PINK CUTTINGS (J. Laxton).—These came safe to D. B., who asks us to return his thanks.

INSECTS ON PEACH TREES (Cruz).—We cannot suggest a remedy with any certainty of success, unless we know what insects they are. Send us some specimens in a quill. In the meantime fumigate well with tobacco.

COOMRAH.—“I have got a tuber of a Chinese Potato, sent me under the name of Coomrah. I shall feel obliged to you, or any of your correspondents, if you will be kind enough to inform me what treatment it requires, through the medium of THE COTTAGE GARDENER. It is a brown tuber, about a foot in length. It is very dry; but apparently has a good many eyes. Should it be cut as a Potato, and started in heat? I should feel obliged if you would notice it in Tuesday's paper.”—A SUBSCRIBER.

[We do not know this root, and shall be obliged by any one sending us some information.]

BRET (A Constant Subscriber).—The samples you have sent of Henderson's Pine Apple Short-topped Beet are very good indeed. It is evidently a most excellent sort, and does not grow too large.

MAGGOTS IN GREASE (W. H.).—These will not injure plants growing in soil into which those maggots are dug, or poured. They live only on animal matters.

WORK ON GARDEN PLANS (A Subscriber).—You have, you say, our “Garden Manual,” “the only work anywise approaching your want;” but you require a larger work. Loudon's *Villa Gardener* will, probably, supply your need.

PLANTING A GARDEN (C. M. Major).—The plan of your garden is exceedingly good for such a place; and every one of the beds may have bedding plants, except the two marked standard and dwarf Roses. All you have to do is to match the corresponding beds on each side of the fountain with the same colours, and to put the colours crossways in the four beds round the fountain itself. But, as the beds are not numbered, we can give no more clue for the planting. You should have marked your own proposal, or the way the beds were planted last year, and we would then tell how far you were in, or out of the fashion. We never design a system of planting.

RED SPOTS ON VINE LEAVES (A Many Years' Subscriber).—Your leaf was too withered to enable us to see the red spots; but we incline to think the spots are warts, produced by more moisture at the roots than the leaves can healthily perspire.

GARDEN PLAN (Broughton J.).—Your first garden is well planted; but we prefer the middle of the centre group, bed 5, to be white, then 6 and 7 to be made out of 5; that is, planted with *Tom Thumbs*; 8 and 9 as you have them; but your own way is just as good. For the east garden, 14 and 19 are well placed for *Tom Thumbs*, and white Ivy-leaf; then the corner beds, 11 and 15, ought to be of weaker colours than 10 and 16, say of Heliotrope; 13 and 17, being the farthest from the eye, will bear stronger colours than 10 and 16. Unless your *Caprifolium* is *gratum*, it cannot be determined by a leaf and cut flower. Why not send a branch with a whole flower-head?

PLANTING BEDS (A Country Subscriber, Cheshire).—The right way to plant your beds is in match pairs. Every two and two must be alike. The first pair, 34 and 40, are quite right. All the rest are out of fashion; but you cannot err in planting anything in such beds, only have them in pairs.

GARDEN PLAN (W. B.).—We never plant beds, or flower gardens; we only correct and criticise the planting of others. Last year, your Scarlet Geraniums, Calceolarias, Golden Chain, and all the Verbenas, were exceedingly well done. You want a row of *Cerastium tomentosum*, six inches in width, and to come out quite close to the grass, all round No. 9, the middle circle, as you ought to keep to the same colours in 7, 8, 10, and 11; and inside the Cerastium, one row of *Saponaria Calabrica*, which would fill the whole space. The front of the sloping border of evergreens, with standard Roses at the bottom, should be all white, and the best telling white. The greatest fault at the Crystal Palace, is repeating the strong colours in the beds, in front of all the shrubberies. That was better last year than formerly. White in front of evergreens, at long distances from the eye; and all kinds of shades of pink, lilac, and purple, when near the eye, can never be wrong. But in a flower garden, or in sight of beds, never plant scarlet, yellow, or crimson, in front of evergreens, much less in front of mixed shrubberies. To do so always insures the want of effect.

NAME OF PLANT (Joseph Robinson).—It is impossible, from the specimen sent, to say whether the tree is *Cedrus Lebani* or *C. deodara*.

amusing paper, written some years since, of eminent men who had foreseen and prophesied the decadence and ruin of their country. We suppose they really believed what they published; but how tiresome and provoking it must have been for men of forty, stern, cool, erudite, and politic, to predict ruin in twenty years, to live to be seventy, and then find their country daily improving: or a man declaring that nothing but an ardent patriotism could induce him to come before the public with the only scheme that can avert ruin, to explain it carefully, and almost with tears to adjure people to adopt it, and to discover at the end nobody remains to listen to him. There is nothing left for him but to go home and lament a ruin which exists only in his own imagination.

So in our poultry proceedings. We have at this time lots of appeals. They all end by saying, the prosperity and duration of Poultry Shows depend on the adoption of their scheme. Thus we have rules for judging, in order that all may agree. We never heard anything so utopian. When do two barristers, or two solicitors, or two physicians, or two apothecaries, or even two civil judges agree? But it is said, poultry judges have the same birds to judge; so have all the foregoing the same cases, yet their opinions are different.

But, after all, what is the complaint that is urged?—that birds, which take a first prize at one Show, do not at another. “Who can reconcile such eccentricities?” says one. “What are exhibitors to do?” says another. “Something must be done,” cries a third. “I shall give up exhibiting,” exclaims a fourth. Now, what is the fact nine times out of ten? Just this: At some small local Show, but probably well judged, a pen of no great merit, but without glaring defects, gains a first prize over a small class of barely average birds. They are there first-prize birds. The price is moderate, and they are bought. They are shown at a larger Show, judged by the same Judge or Judges, and commended. They are brought into competition with first-class birds. They were victorious over bare mediocrity; but they are beaten by real merit. They won, because they had no defect; but they fail by the side of positive merit. We do not mean to say that Judges do not make mistakes, or that the office is not sometimes assumed by those who have no legitimate claim to it; but, as a rule, the principal Shows are well and properly judged.

We are disposed to smile, when we read a determination to give up showing, and when we come to the frequent termination, “Such inconsistencies are fatal to the pursuit, and I shall give up exhibiting.” It was said of a man, that he left off killing flies because so many attended the funeral of each, that the numbers in his house increased. So, we think, for every exhibitor who relinquishes, two take it up. We lately met a man who, some years since, was a very large exhibitor; of course he assumed an air of ignorance about the matter, asked if those follies still continued, was astonished when we told him he had not been missed from his classes; and, after declaring he took not the slightest interest in his poultry, offered to show three pens of different breeds for any sum of money, and against any three in the kingdom. When he retired, six years since, he told all his friends the thing was at an end. He had given up, and they would soon hear no more of the matter. He has been in the position of those who look for national ruin, and are doomed to life-long disappointment.—B.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

MARCH 15th, 16th, and 17th. SHROPSHIRE. Sec., T. W. Jones, Church Street, Wellington, Salop.

MAY 25th and 26th. BEVERLEY. Sec., Francis Calvert, Surgeon, &c.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Pitman, Esq.

JULY 1st, 2nd, 4th, and 5th. SHEFFIELD. Wilson Overend, Chairman. Entries close the 15th of June.

N.B.—Secretaries will oblige us by sending early copies of their lists.

RULES FOR JUDGING.

CERTAIN things and questions come periodically before the poultry public; they are as regular as the seasons. They are like certain motions before the “House”—such as closing at an early hour of the evening, the “Ballot,” and so on. They always come on, and they always meet the same fate. There was an

“PRESERVE me from my friends!” Well might Mr. Botham say so. “SALOP” comes in for commendations, of course. “ALPHA,” surely, deserves to have some; but “RED ENSIGN” ought to be plated; for he asks the pertinent and unfortunate question, “Are Black Hamburgs a distinct breed? for they also breed true, and possess the genuine characteristics of that class of birds.” The gist of the entire argument rests on the solution of this unlucky question. Can you breed out a cross, so as to insure a certain fixed form, feather, &c., similar to Pigeons? “RED ENSIGN” says “Yes,” and so do I. The Moonies and Gold-spangled (or Pheasant) Hamburgs, the Black Hamburgs, the Pile Game, the Black Polands, Game-Bantams, Brahmans—all and every one of these are instances of the truth that crosses, when bred for any length of time, will throw scarcely a taint of their former selves. Certain classes are more easily managed to breed than others. I got a second prize at Exeter, and highly commended at the Bath and West of England, some two years back, for Black Hamburgs; and these were bred (the two hens)

from a Silver-pencilled Hamburgh hen, and Black Spanish cock. They went to Germany as good specimens; and this is a contrast of colours with a vengeance. See what trouble is taken to breed out the figure-head of the Malay in the Game class, whilst we like to maintain the size and colour—and it is done.

I also have near me a cock and hen of the Andalusian breed, (the mother still living, with regular Dorking toes and legs), and yet they are very superior-looking birds, and last year produced some splendid-looking pullets, true to a feather.

Brahmas are just as easily manufactured. The tail is a little in the way at first; but when the hen that throws the best cocks is known, and *vice versa*, the thing is as "RED ENSIGN" properly remarks—"they breed true, and possess the genuine characteristics of that class of birds." I have no wish to run down the Brahmans; but I will not run them up as a distinct breed when I know they are not. Mr. Botham, doubtless, has the cross in its most certain reproductive form. He says so, by contrasting the quality of his run with the faultiness of others. So far so good, so far as this point is concerned: but should my weary limbs ever drag me to the hospitable domicile of Mr. George Botham, of Wexham Court, and a dinner of Brahma be in store for me, I hope he will pardon me if I suggest a little bit of bacon with the same.—W. H., Exeter.

BOLTON AND LANCASHIRE CENTRAL POULTRY EXHIBITION.

WE gave a brief notice of this Show last week, and we now give a detail of the awards.

SPANISH.—First, A. F. Watkin, Sheffield. Second, J. Garlick, Everton. Third, E. L. Cootier, Croydon. Highly Commended, S. H. Hyde. Commended, C. T. Nelson; P. Thomasson.

DORKING (any colour).—First, Capt. W. W. Hornby, R.N., Knowsley. Second, J. Robinson, Garstang. Third, Mrs. Thicknesse, Bolton. Highly Commended, Gray and Aykroyd. Commended, W. Holt; J. Wood; C. H. Wakefield; H. Mason.

COCHIN-CHINA (Cinnamon and Buff).—First, W. Copple, Eccleston. Second, Miss V. W. Musgrave, Ormskirk. Highly Commended, T. Stretch; T. W. Redhead; J. Cattell. Commended, T. Stretch; H. P. Watson.

COCHIN-CHINA (Brown and Partridge-feathered).—First, J. Cattell, Birmingham. Second, C. Felton, Birmingham. Highly Commended, T. Stretch; Miss V. W. Musgrave.

BRAMHA POOTRA (any shade).—First and Second, T. W. Redhead, Bolton.

GAME (Black-breasted and other Reds).—First, A. Sutherland, Burnley. Second, G. W. Moss, Liverpool. Third, T. Snelson, Burton-on-Trent. Highly Commended, Capt. W. W. Hornby, R.N.; W. Dawson. Commended, J. Fletcher; J. Crosland, jun.; T. Robinson.

GAME (Duckwinged, and other Greys and Blues).—First, G. W. Moss, Liverpool. Second, H. Worrall, Liverpool. Highly Commended, W. Lomax; A. Sutherland. Commended, T. W. Redhead; R. Dickinson.

GAME (White and Piles).—First, Messrs. Haigh and Hartley, Holmfirth. Second, E. Bebbington, Minshull Vernon. Commended, G. Ward.

GAME (any other variety).—First, A. Hampson, Bolton. Second, W. Dawson, Mirfield. Commended, T. W. Redhead; J. Berry; G. Hellewell.

GAME (Single Cock of any age or colour).—First, W. Dawson. Second, A. Sutherland. Third, T. W. Redhead, Bolton. Highly Commended, G. W. Moss. Commended, J. Clegg; J. Metcalfe; T. Procter; E. Archer; A. Hampson; J. Hampson.

PHEASANT OR HAMBURGH (Golden-pencilled).—First, W. C. Worrall, Liverpool. Second, Messrs. Carter and Gaultier, Poulton-le-Fylde. Highly Commended, J. Martin; Messrs. Carter and Gaultier; T. Robinson. Commended, J. Dixon.

PHEASANT OR HAMBURGH (Silver-pencilled).—First, T. Keable, Rowdefield. Second, E. Archer, Malvern. Highly Commended, J. Dixon. Commended, C. W. Grenfell.

PHEASANT OR HAMBURGH (Golden-spangled).—First, S. H. Hyde, Ashton-under-Lyne. Second, W. C. Worrall. Highly Commended, G. and J. Burton; Messrs. Haigh and Hartley; W. D. Henshall; J. Robinson. Commended, J. Dixon; J. Whitworth.

PHEASANT OR HAMBURGH (Silver-spangled).—First, J. Dixon, Bradford. Second, J. Collett, Liverpool. Highly Commended, J. Robinson.

POLANDS (any colour).—First and Second, J. Dixon.

ANY OTHER DISTINCT BREED.—First, W. Copple, Eccleston. Second, W. Rogers, Woodbridge. Highly Commended, J. Dixon; H. Bridson; J. Robinson; W. Dawson.

BANTAMS (Game).—First, I. Thornton, Heckmondwike. Second, H. P. Watson, Preston. Highly Commended, W. C. Worrall; J. Crosland, jun.; J. France. Commended, Mrs. A. G. Brooke; R. Farrer; H. Worrall.

BANTAMS (any other variety).—First, J. Cattell. Second, Capt. W. W. Hornby, R.N. Highly Commended, C. Felton. Commended, J. Dixon; H. P. Watson; H. Worrall.

GERSE (any age or colour).—First, J. Dixon. Second, D. Jones, Bolton. Highly Commended, D. Jones.

TURKEYS (any age).—First, J. Dixon. Second, D. Jones. Highly Commended, J. Wood.

DUCKS (Aylesbury).—First, J. C. Forrest, Darwen. Second, J. Wood, Wigan. Highly Commended, R. Farrer. Commended, J. Smith.

DUCKS (Rouen).—First, D. Jones. Second, J. C. Forrest. Commended, J. Dixon.

DUCKS (any other variety).—Prize, J. Dixon. Prize, J. Dixon. Prize, J. Smith, Lytham. Commended, A. Hampson.

PIGEONS.—*Almond Tumblers*.—First and Second, Eli Fielding, Rochdale. *Tumblers* (any other variety).—First, G. W. Hartley, Kendal. Second, E. Fielding. Highly Commended, G. W. Hartley; E. Fielding. Com-

mended, J. F. Smith; G. Goore. *Carriers*.—First and Second, P. Eden, Salford. Highly Commended, J. F. Smith; F. Mewburn. *Pouters*.—First and Second, P. Eden. *Runts*.—First, P. H. Jones, Fulham; P. Eden. *Jacobins*.—First, G. Goore, Aigburth. Second, P. Eden. *Fantails*.—First, P. Eden. Second, F. C. Esquillant, Oxford Street, London. *Owls*.—First, P. Eden. Second, G. Goore. Highly Commended, P. H. Jones; G. Goore. *Trumpeters*.—First, F. Mewburn, Darlington. Second, P. H. Jones. *Barbs*.—First and Second, P. H. Jones. Highly Commended, P. Eden. *Turbits*.—First, P. H. Jones. Second, G. Goore. *Nuns*.—First, G. Goore. Second, P. Eden. *Dragoons*.—First, C. Felton. Second, J. F. Smith, Oldham. Highly Commended, E. Bebbington. *Any other new or distinct variety*.—First, T. and J. Grimshaw, Burnley. Second, G. Goore.

CANARIES.—*Clear Yellow Belgians*.—First and Second, A. White, Bacup. Third, W. Orrell, Bolton. Fourth and Tenth, J. Booth, Bolton. Fifth and Seventh, J. Robinson, Manchester. Sixth and Eighth, T. Baron, Kendal. Ninth, Eleventh, and Twelfth, J. Orrell, Bolton. *Clear Buff Belgians*.—First, Third, and Eighth, J. Robinson. Second, J. Booth. Fourth and Fifth, J. Orrell. Sixth, W. Ryder, jun., Bolton. Seventh and Tenth, A. White. Ninth and Twelfth, W. Oriell. Eleventh, J. Sharrocks, Bolton. *Sweepstakes for the best of any variety*.—First and Second, J. Lindgard, Ashton-under-Lyne. Third, J. Robinson. Fourth, J. Orrell.

The Committee's Prize of Ten Shillings for the best Cage for exhibition purposes, was awarded to Mr. Joseph Orrell, Lever Street, Little Bolton, after very close competition.

SWEEPSTAKE FOR GAME COCKS.—First, A. Sutherland. Second, Third, and Fifth, G. W. Moss. Fourth, E. Archer. Highly Commended, W. Rogers; T. Procter; W. Dawson; H. Worrall. Commended, T. Shaw; E. Archer; T. T. Parker; H. Worrall; J. Hampson; R. Gorton.

The Judges were unanimous in declaring that the Show far exceeded their expectations at this season of the year.

TRIMMING SPANISH FOWLS.

I HAVE been much pleased with the discussions on this subject which have appeared in THE COTTAGE GARDENER lately; and if I could depend on its being carried into practice, I should rejoice at the prospects held out in the Number for Feb. 22—viz., that "none but birds naturally shown will be allowed to take prizes," because "our principal Judges unanimously condemn the practice, and will not award prizes to trimmed birds."

I am personally acquainted with an exhibitor who has a decided objection to trimming, besides the trouble and tediousness of the operation, but was persuaded it was necessary in self-defence, who was successful with trimmed birds at the last Birmingham Show, but disqualified at the Crystal Palace (perhaps had rather overdone it). I am informed Judges were equally opposed to the practice at both places.

I am induced to trouble you with these remarks for two reasons: 1st, To point out the difficulty of detecting trimming when judiciously done; and 2ndly, To induce a more determined scrutiny with regard to birds exhibited, and, if possible, to decide whether trimming more or less is, or is not, to be. I fear there will be cases met with where it will be difficult, if not impossible, to tell whether certain feathers have been plucked out, or if any ever grew. If so, birds of very superior merit in this respect may be disqualified in consequence of their unusual perfection, unless they could be retained so as to watch the new growth. I know some argue that the mere removal of those straggling hair-like feathers from the face (especially of hens and pullets), is a trimming that neither is, nor ought to be, objected to, provided the regular close-set feathers are not interfered with so as to make the face larger than is natural. Moreover, say they, if judiciously effected, no one can detect it. These are the questions that stand in need of clearing up; because, if trimming is allowable at all, it will always be difficult to decide where it must stop. And if the least amount of trimming, nicely done, cannot be discovered, disqualifications of the more glaring instances will only be productive of disgust and dissatisfaction.—BLACK SPANISH.

OUR LETTER BOX.

GIDDINESS—GAPES (*W. C. Gledhow*).—The giddiness or vertigo must be treated as directed last week, at page 346. *Gapes*, as we have often said, arises from worms in the windpipe, and is very difficult to cure. We have lately been told that forcing a little sweet oil down the windpipe, by means of a small syringe, kills the worms, and the bird coughs them up. The zinc troughs have nothing to do with the disorders. You certainly feed too liberally—that causes vertigo; but gapes comes we can hardly tell how. Give clean water every day, and keep some rusty pieces of iron in it.

PRESERVING EGGS FOR COOKING (*G. S.*).—The longest time of eggs being preserved for this purpose, was effected by dipping them into melted fat, and storing them in a cold cellar when the coating of fat on each was hard. If we tried lime, we should bury the eggs in slackened lime. A layer of eggs and of the powder alternately. Using a cask, and placing it in a cold, dry place.

BRAMHA PULLET (*E. D. S.*).—There is something the matter with her egg-system. "She lays shell-less eggs, shakes a slime from her mouth, and croaks or coughs." Give her a dessert-spoonful of castor oil; nothing but soft food, such as boiled potatoes and rice, with plenty of green food, and keep her away from the male bird.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	MARCH 15-21, 1859.	WEATHER NEAR LONDON IN 1858.						Clock afterSun	Day of Year.		
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R.ands.	Moon's Age.		
15	TU	Hakea saligna.	29.951-29.833	53-43	W.	-	17 af 6	2 af 6	54 m 4	11	9 12	74
16	W	EMBER WEEK.	30.070-30.034	62-41	W.	-	15 6	3 6	15 5	12	8 54	75
17	TH	Gnidia imberbis.	30.233-30.102	55-40	W.	-	13 6	5 6	32 5	13	8 37	76
18	F	PRINCESS LOUISA BORN, 1848.	30.196-30.169	57-38	W.	-	10 6	7 6	rises	(?)	8 19	77
19	S	Mirbelia grandiflora.	30.280-30.248	63-42	W.	-	8 6	8 6	26 a 7	15	8 1	78
20	SUN	2 SUNDAY IN LENT.	30.512-30.400	62-27	N.	-	6 6	10 6	49 8	16	7 43	79
21	M	Sun's declin. 0° 9' N.	30.469-30.400	59-25	S.W.	-	4 6	12 6	13 10	17	7 25	80

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-two years, the average highest and lowest temperatures of these days are 50.8° and 33.9°, respectively. The greatest heat, 69°, occurred on the 19th, in 1836; and the lowest cold, 16°, on the 20th, in 1845. During the period 141 days were fine, and on 85 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

BASIL.—Sow, and also Tomatoes and Capsicums, in pans, in a warm frame.

BEANS, BROAD.—Make another sowing. The Long-pod is a prolific sort, but the Green Windsor has the best appearance when sent to table. Earth up the early crops.

BROCCOLI.—When the heads are cut, remove the stalks to the rubbish-heap, or lay them on the ground. If some hot lime is at hand, spread it over them, to destroy grubs and to produce quick decomposition; cut them into small pieces, and then deeply trench them into the soil. Sow Grainge's Early White and Early Purple, if not done last week.

BRUSSELS SPROUTS.—When all are picked, or running to seed, treat them in the same manner as advised for Broccoli. Sow seed for an early winter supply.

CABBAGE.—Sow, as also Cauliflowers and Lettuces; they will come in useful by-and-by.

CARROTS.—Sow for the main crop.

CELERY.—Sow, if not already done, for the principal crop, on a gentle bottom heat; and a small bed of it, on a warm border in the open ground, for the latest crops. Prick out the early-sown into boxes, or on a slight hotbed; when they have taken root, give air at all favourable opportunities.

CUCUMBERS.—As soon as the frames are uncovered in the morning, give a little air for an hour or two, to let the stagnant air pass off. As soon as the principal shoots have reached the side of the frame, never allow any of the laterals to grow more than two joints before they are stopped.

HORSERADISH.—Plant, if it is to be done this season.

JERUSALEM ARTICHOKES.—Plant without further postponement.

ONIONS.—If large ones are required, plant the very small bulbs of last year, or the autumn-sown plants, in very rich ground.

PEAS.—Stick the early crops as soon as they are earthed up. A few small fir or beech boughs, with the leaves on, to be stuck in on each side of the row, to protect them from frost or cold winds.

POTATOES.—Continue planting, and protect any that are peeping out of the ground, by drawing a little soil over them.

PURSLANE.—Sow on a warm border.

RADISHES.—Sow for successional crops. The Turnip-rooted sort may now be sown.

RHUBARB.—If fresh beds are wanted, they should be planted with the least possible delay.

ROUTINE.—As the weather is favourable, clean and stir the ground between the rows of Lettuce, young Cabbage, autumn-sown Onions, Garlic, Shallots, and other such winter-standing crops.

SALSAFY and SCORZONERA.—Sow in drills one foot apart.

SCOTCH-KALE.—Sow, and also Savoys and Chou de Milan, for early winter supply.

SEA-KALE.—The same as advised for Rhubarb.

FRUIT GARDEN.

GRAFTING.—Where it is intended to head down old trees, it should be done at once, and the young stock to be grafted as speedily as circumstances will permit.

FLOWER GARDEN.

ANNUALS (Hardy).—Sow.

BEDDING-OUT PLANTS.—Continue, if wanted, to put in cuttings of Anagallis, Lobelia, Petunias, Scarlet Geraniums, Fuchsias, Verbenas, &c., they will strike in a short time if the pots are plunged in a sweet, brisk bottom heat of 75°.

BULBS.—Look over the beds, or patches, planted with them; and, where necessary, stir the surface soil, so as to keep it open and friable, and also to give it a fresh appearance.

CALCEOLARIAS.—Harden them off, by removing them to a cold frame and exposing them freely to air.

CLIMBERS.—Plants of Lophospermums, Maurandyas, Tropaeolums, Rhodochitons, and other such flower-garden climbers, to be now selected and shifted into larger pots, and every encouragement to be given to them; that they may attain a good size before they are planted out in June.

DAHLIAS.—Increase by propagation.

HERBACEOUS PLANTS.—Finish planting without delay.

HOLLYHOCKS.—Increase by propagation.

PANSIES.—Stir the surface of the beds, and top-dress them with rich compost.

PINKS.—The same as advised for Pansies.

POLYANTHUSES.—Sow seeds in pans or boxes, shading the plants, when they vegetate, from the direct rays of the sun.

ROUTINE.—Sweep and clean lawns, and give them a good rolling, after rain, with a heavy roller, to make the turf smooth and solid. If any alterations, or planting, still remain unfinished, every endeavour should be made to get it completed as soon as possible. Let all fresh turfing be completed forthwith. The walks to be turned, if required; and Box edgings made, or repaired, if necessary.

TULIPS.—Stir the surface of the beds, and give some occasional waterings during dry weather.

WILLIAM KEANE,

VAUXHALL NURSERY.

MESSRS. MILNE, ARNOTT, AND CO.

THE last time that I was in the Vauxhall Nursery was at the end of March, twenty-one years back; the newest thing that I remember of all I then saw was a Chinese Camellia, which was introduced by Mr. Reeves, and which was to be let out at this nursery, and named *Albertus*. The firm was then Messrs. Chandler and Son. The conversation turned on the great fact that *Albertus* was another, and the best, proof that the Chinese florists could beat all ours at a trot in respect to raising the best Camellias and the best Chrysanthemums. We had many

Carnation kinds of our own raising, but *Albertus* beat them all at the first start; and notwithstanding that three hundred different kinds came into the trade since that year, not one of its class has yet been produced out of China so good as *Albertus*. But add twenty years more to this random recollection, and then the Vauxhall Nursery was the first in Europe for Camellias, for seedlings, for introduced kinds, and for selling them. It was the best nursery to learn the different ways of propagation, and the best times for doing it: but I recollect a day—not much over thirty years back—when you could hardly buy twenty kinds of Camellias, even in the Vauxhall Nursery, because there were not quite so many kinds then in existence. Now, however, the Messrs. Milne, Arnott, and Co. can supply nearly five hundred kinds. They are the right kind of men in the right place. I wanted to see their ways of doing things ever since they undertook this nursery; but in order to make it pay both ways—for their good and credit, and for the benefit of our readers—I deferred my call till the Camellias were just in their prime; that all readers who have a mind that way, and are within so many hours of London, may ascertain for themselves that these Camellias, and other things, are even better than they appear in my report.

On reaching the gate, the old and well-known entrance is lost—gone for ever! A new iron boundary-railing, on the top of a half-high wall, and an Italian terrace garden, laid out and ready for planting. Immediately beyond this renovated boundary (the best design of that kind in any place that I know of), a chain pattern, in Box, gravel, and flowers, runs the whole length of the terrace garden; next the iron railings, and at the farthest end across, and again behind the terrace garden are two borders, well suited for the ribbon style of planting. All this will be planted with that taste and judgment which we expect to find in a first-rate “gentleman’s gardener,” as we say; assisted by another, whose father and mother were the best of gardeners. I can vouch for it that Mr. Arnott began gardening early enough. It was at Cheltenham; and he was just beginning the rule which teaches all of us how to stand on the centre of gravity, and give up “all fours,” when I first knew him. His first feat in gardening, in my presence, was some corrections among the tallies in a lot of pots at which we were looking. He pulled up a tally that was in the wrong pot, balanced himself for an instant, then threw the tally with all his might across the stool, and down he came plump on the part not his top, and laughed right out at his father for not knowing how to place his pot-tallies. Therefore, taking all these things into one view, I expect, next August, the most scientific bedding-out, nearest to St. Paul’s, will be seen in front of the Vauxhall Nursery.

We enter through the seed-shop, which is gay with spring flowers; pass on through the Fern-house, which is also decorated on both sides of the way with forced flowers, where I saw *Lord Byron* (a single red Hyacinth) for the first time, and that shaded colour, for the first time, in Hyacinths. After it is open a certain time, the colour of this Hyacinth runs into two shades,—*atrosanguineum*, edged with clear lake colour, for which I know no botanical name. But if you want to see what the ladies mean by planting beds, or borders, on the shading system, this is the best flower I ever saw to give a true idea of that style in these two colours:

Daphne collina was a fine object among these forced flowers; a very strong Fern, called *Cyrtomium falcatum*, from China and Japan, was pointed out to me as the best hardy evergreen Fern that was ever introduced; and another proof, equally good, was by the side of it. The *Crimson King* Geranium proved to be as good for forcing as *alba* and *multiflora*; and, at this early season, it is richer than *Gauntlet*. There was a new forcing Geranium called *Larkfield Rival*, which they are pushing a-head, in propagation, believing it to be a superior force. This

Geranium is of enormous strength, and is of the race of Dennis’s *Alma*, in growth. I did not hear the kind of flower, for I was pressing on to the great Camellia-house, which is sixty yards long without a division; a front stage full of the youngest saleable plants from end to end; a matted walk, with a door mat as you enter; a back bed, with a row of specimen Camellias planted down the centre; and the spaces in front of them, between them, and all round them, are full of larger plants. The back wall is also stocked with old plants; and the whole, to the tune of some thousands, are now in bloom, and not another kind of plant in the whole house,—all are Camellias! all wanting to be seen, and only waiting to make new acquaintances, and to get out of London; and as fast as the handsomest, the richest, or the best looking of them goes off, another, and another, are ready to try the same chance, and to keep up the full bloom, which will go on to the end of the flowering season.

The show is magnificent just now; the roof is shaded by day to prolong the beauty; and, as to watering, there is hardly a firm within my reach who gives them more water, both at the roots and over the leaves.

The chief thing which would strike an old gardener, on learning how this house is so constantly supplied with saleable plants, is the difference between the propagation by buds and grafts, and that by inarching from stools and old specimen plants. By the bud and small-graft system, the plants generally take three years to be of a profitable size for sale; whereas, by the inarching plan, the same style of plants is got ready in twelve months. There are six ranges of cold pits, each thirty feet long, with twenty-two stools, or old Camellia plants, planted out in each range, to give inarched plants. Shoots that are inarched in February, or March, will be ready to separate from the stools in October and November, with that season’s strong growth in flower-bud; and these plants are coming into bloom by the end of the twelve months from the time of inarching, in the freest growth and most perfect health. But for convenience’s sake, this inarching may be done, and used to be done here, when I first knew this nursery, from October to the end of March, or till the fresh growth of the season put a stop to the work. The same propagator, who did that work thirty years ago, was engaged in one of the pits that day inarching, as in the days of yore, and confirmed the convenience of beginning as early as October to inarch, so that the press of that department should not fall on February and March—the best time to perform the work, when only an ordinary number was required. The best time for grafting single buds of rare kinds, and small grafts from short commons, is from the ripening of the young growth of one season, on to the beginning of the growth of the next season; or say from July to April—both, perhaps, inclusive. And yet, in private practice, the best time depends on one’s convenience for getting on the work, when you can best spare a close box, to stand the pots in while the grafts are taking. If the close box is indoors, like a Waltonian Case, and is as warm as would do for Cucumbers, the grafts will take in the dead of winter as well as at any other time; and if the close box is just warmer than for a greenhouse, it will do, but will take the longer time in the doing. So you see Camellias can be had from inarching at any time from September to April, and from grafting all the year round, except when the growth is making and getting ripe.

Then, to get the stocks, apply the practice of this nursery, and you have nearly twelve thousand cuttings of single Camellias put in 32-sized pots in September. You stand, or, rather, you may plunge, the pots for the first three months in a cold frame: they stand theirs in cold pits, and at the end of three months they take them to a close, hot, propagating-house; all beginning to make roots beautifully. In this hot place they begin growing early—and the growth is finished and ripened by the end of June; then every one is put into a single pot, No. 60’s,

and they are kept close, and from the sun, for a month ; and by the time it is just twelve months from the inserting of the cutting, the young stock is fit to graft on. The first few thousands of grafted plants for this season, in this establishment, are now out to shift for themselves ; and the second batch was in the close cases ere February was out. Here they are as close as they can stand, on soft sand, heated from below. As soon as the grafts have taken, out with them in the body of the house, which is hot enough for anything, and in with the next lot ; and so on, as long and as often as you can get ripe wood and stocks.

The manner of grafting Camellias is the simplest thing on the face of the earth. You put in the knife, and cut down a slice, one inch long, on the face of a plain piece of the stock ; then cut across the bottom of the slice, which leaves a notch there—on that notch fix the bottom of the graft. After splicing it off, in the same way as the stock, tie it with a piece of mat or worsted ; putting it five times round, and no more, for it does not want much covering when the place is hot and moist accordingly. Every such batch is moved, and repotted, as times come round, in cold frames and pits, till the last move lands them in the great Camellia-house, to be seen by the ladies walking down on the dry, comfortable, cocoa-nut-fibre matting, from which the most delicate in the land cannot catch cold.

And now for the large plants in this house ; and then for the best kinds of Camellias, out of 400 kinds, certain. Perhaps I could tell more about some of these plants than half the nurserymen in London. It was here that I learned *my Camellias*, from being a regular customer—for I was never apprenticed to anything ; but, after me, the present Mr. Veitch, of the Exotic Nursery, was bound to learn all that I am writing about, and as much more as he could retain in the time. But how many nurserymen know there are two distinct kinds of *Camellia elegans*? or, out of those who do know, how many can tell their origin? This story is really one of the most curious things about Camellias since the discovery of *hexangularis*. There are many hexangular Camellias now-a-days, the worse luck ; they come that way from ill-treatment, and *Lady Hume's Blush* more so than many others ; but hundreds of pounds have been spent in fruitless pursuit of an hexangular flower in China, before we were aware how to make them at home. Well, *elegans* was a seedling in this nursery, and *Chandler's elegans* came as much blotched and as constant as the old *variegata*. The specimen plant in this house, which is ten feet across, and up to the glass, has from 200 to 300 flowers on it, and every one of them is blotched; but go, and see, and convince yourself, and measure the flowers across—you will find most of them six inches across the face. But other people's *elegans* is as plain as the *Mrs. Elliot Rose*, without a mark of white on it. Both kinds originated in this nursery from the same pod of seed, and from the very same seed. How, then, can there be two kinds of *elegans* in the country? That is the puzzle and the mystery ; and calling one of them *Chandler's elegans* proves my words. Mr. Booth, Secretary to the Horticultural Society, and Mr. Chandler, then junior, published a work on these Camellias, and there you will see *Chandler's elegans* as plain *Mrs. Elliott* ; but go to the nursery, and the same seedling is the plant in bloom. That is the proper strain : who will tell us the reason why?

The best plant is *Carolina*, with about one thousand flowers. It is twelve feet across the head, and up to the glass, as healthy as a dairymaid, and shining as a Rose. *Chandleri* reversed from the original mottled condition to as rich and plain a colour as *Carolina*, and nearly as big. *Woodsii*, the earliest and the longest of them all to hold on the flowers, with 300 flowers like a double Rose half open. *Althaeiflora*, very rich. *Imbricata*, most beautiful, and trained like a show Pelargonium. The old *Double White* the same ; and so with all the rest, which would take up as much room in a book

as they do in the house. But those who go on purpose to see a show of Camellias should ask to see a new seedling just opening the day I was there ; it is at the corner against the back wall as you enter the house, and promised to eclipse all the fine seedlings ever raised here. About the back wall itself I must tell a tale of thirty-three years in length. All that time it was used to plant rare seedlings against, and to inarch from young plants—from the good ones. At last they were all good ones, the inferiors having been replaced by that time. From then to the end of the story they sponged those beautiful plants to the last drop of blood in them. I do not mean sponging to keep them clean, for they were never dirty ; but as they do in sponging-houses, by inarching from them to such a degree, as reduced them to mere skeletons, as they now are. Being good kinds, they are to be kept for renewing their strength ; every shoot and branch on them is to be cut in close to the old hard-sponged wood as soon as they are in growth ; the old soil is to be forked out from among the roots, and new loam, and peat, and sand put in its stead, and a thorough good border all round them ; and as soon as the roots get hold of this, a constant supply of heavy watering will soon make them as fresh and blooming as before. This, therefore, is a safe remedy for all stunted Camellias ; for an old Camellia can be brought round better than any other plant we grow. Nothing, in the way of gardening, being more useful to know than the ways practical men adopt for renovating an old place, and for bringing it up to the requirements of the day. There is a fund of information to be acquired, by seeing how such men go to work to make the thing pay, which would do good even to the Council of the Horticultural Society, who ought to get a leaf out of the book over the water, or be sent to Mecca for destroying the finest library of gardening books in the kingdom, if not for attempting to get up another experimental garden on the banks of the Thames. But as soon as I have spun all my wool into long yarn, I shall tell of the rest of the doings here, of the best Camellias, bedding plants, propagation, and practices which were new to me, and will be useful to most of our readers.

D. BEATON.

A PIT FOR MELONS IN SUMMER, AND PLANTS IN WINTER.

"I am about constructing a pit, so that I might keep flowers in it during the winter, and grow Melons in it during the summer. If you can give me any advice about the sort of pit which would be best for these two purposes, I shall feel extremely obliged to you."—Y. R., Redhill.

We should have liked to have known more of your circumstances, and the means at your command. The best would be a structure supplied with top and bottom heat by hot water ; but, perhaps, you do not mean to have that.

A cold pit will do for keeping many plants over the winter ; and will also do for growing Melons in the middle of summer, if it is deep enough to permit of having eighteen inches or so of fermenting material under the soil. We will glance at a few that will answer in different circumstances ; and, perhaps, you may be able to suit yourself, or give us an account of the plan you propose, and we will give our opinion upon it.

I. A pit to keep plants in winter, and grow one crop of Melons in summer ; planting the latter, say early in May ; the pit to have no heating medium in the way of pipes or flues, and no linings applied externally. Make such a pit from five feet and a half to six feet wide, five feet high at back, and three feet and a half, or three feet nine inches, high in front. Sink it twenty-four inches to thirty inches below the ground level, if you can secure dryness by drainage or otherwise. Build the walls with bricks, nine inches wide, and hollow. This will so far prevent the

heat of the sweet, fermented manure escaping in summer, and prevent the frost easily going through the wall in winter. In very severe weather it may want a mat, or a little straight straw, neatly tied along the outside. Of course, the glass must be protected in all frosty weather. In building the walls, place a row of bricks—say at fifteen inches from the desired height in front—so that they shall stand beyond the perpendicular, inside, one inch and a half or two inches. Do the same at the back, in the same parallel row of bricks. You will thus have a ledge, both back and front, on which to rest strong planks or slabs, so as to form a platform for your winter plants. You might have a second ledge eight inches deeper, to be used for taller plants. The bottom of the pit would furnish a third platform. So that you could have three sizes of plants in the same pit, though, of course, only one size chiefly in one place. Provided you had three strong cross bearers beneath each light resting on these ledges, you might have small sloping stages made, so as to keep the plants near the glass, and you could sink them as they required it. Of course, all these would be removed as soon as you put in your fermenting matter, a depth of two feet at front, and more at back, for the Melons, &c. I allude to these ledges for supporting platforms and stages to slope with the glass, because a good deal of success in keeping bedding plants in winter, in such an unheated place, will depend upon them. Many, to avoid all such trouble, allow the earth in which the Melons grow to get dry and sweet, cover that with dry ashes, and, provided they spill no water, and use none except what is necessary, imagine they will be free from the great enemy in such circumstances—*damp*. But if there is a long period of dull, foggy weather, or if, in severe frost, the lights must be much covered, and but little air given, the moisture contained in the soil and dung will be sure to get up, and help to keep the plants in a vapour-bath. This, to a great extent, will be avoided if earth and dung are removed sometime before the plants are replaced, the pit well aired and dried, and the bottom covered with the driest ashes, after the walls have been cleaned and whitewashed with quick lime. This is not the only advantage in staging, or plat-forming. Place your plants on the raised bed of soil, &c., and your pit contains but about half the amount of air it would do when emptied to the bottom. That air, therefore, is more quickly heated by sun, and cooled by frost, than if its volume had been much greater. By using a platform, your plants will not be excited to grow by sun heat in winter so much; and they will often endure a slight frost uninjured, which would have nipped those standing near the glass, and no air below the pots. Of course, in all such pits, the paths round them should be firm, and slope considerably from the walls, so as to throw from them all the surface water. Dryness in winter is the first consideration.

II. Modifications of such a pit—to be artificially heated.
 1. To have early Melons without any assistance from the heat from decomposing manurial matter. In such a case, the ledges for platforms would not be needed so much. A suitable boiler had better be provided. Two three-inch pipes would be required for bottom heat, and two of the same size for top heat. The bottom of the pit should be concreted, and hollowed to the centre like a shallow basin; a little thin cement might be run along the top. This, if well done, will hold sufficient water to secure a moist heat when required. The pipes may be placed within half an inch of this concrete, and be packed all round, to the depth of a foot or eighteen inches, as hollow as possible, with brickbats, clinkers, stones, &c.; terminating at the top with a layer of coarse, and then fine, gravel, on which the soil will be placed. No bottom heat will be wanted for the plants in winter, if bedding, or ordinary greenhouse, plants are used. 2. Where manurial decomposing matter will be used for bottom heat, and two pipes for top heat, when required in summer,

and for keeping out frost in winter. The position of the pipes will matter but little, whether near the bottom or the top of the front wall of the pit, provided they are not shut in. 3. Where dung and leaves will be used for bottom heat, and two pipes allowed to assist top and bottom heat in summer, and keep out the frost and give motion to the internal air in winter. In this case, two pipes—if four-inch all the better—should be fixed near the bottom of the pit, and pretty closely to the front wall. A wall of brick on edge, or a thin moveable partition of wood, should shut in this small space where the pipes are from the pit; the fence, or line of partition, rising rather higher than the soil in the pit is likely to be. Communicating with this open chamber, an open drain should cross from the front to the back of the pit, every four feet, formed of earthenware pipes, or bricks, or other heat-conducting matter, and communicating with the atmosphere of the pit by means of open, round, earthenware pipes, standing against the back wall, and higher than the soil is likely to be. By these means, whenever the pipes are heated, there will be a circulation of air. The air in the open chamber in front will be expanded, rise, and pass over the bed and its crop, and fall, as it cools, to the open drains at the back; and, passing through the cross-covered drain, supply the place of the heated expanded air in the small enclosed space. The fermenting matter will be placed over and between these cross drains. Then, in summer, when the bottom heat may have declined too much, we have only to choose a sunny day, when top heat is not wanted, heat the pipes—but cover the small cavity along the front above the pipes with narrow boards made to fit, or other means—and insert a plug in the upright pipes at the back; and the heat from the pipes, instead of heating the atmosphere, will be forced to exert itself in warming the cross drains, and, through them, influence the heat of the dung and soil.

III. It might be very troublesome to get rid of water, if the pit should be partly sunk. In that case, it may be all above the ground level; but, if heated inside by manure, rather more depth will be required, and more attention to protecting the walls in winter, unless fire heat, in some mode, be used. A flue is not quite so good as a pipe. In such pits, managed almost entirely from the outside, high walls are very unpleasant to work from; but that is much less an evil than being troubled with water. That is also one reason why we confine the width to about six feet, as the centre may be reached without often placing the foot inside.

IV. Where plants are to be kept in winter, and early Melons procured with the help of dung alone, in unison with general neatness. In such a case, sweet fermented material must generally be placed inside, with drain tiles through it, or open faggots, to be kept open, and acted upon afterwards, by linings round the sides; these linings neatly covered with shutter boards to keep all out of sight, and sloping outwards from the wall. There are various modes of getting the linings to act on the interior. Some have pigeon-holed, nine-inch, or four-and-a-half-inch walls, below the level of the linings. If four-and-a-half inch walls, nine-inch pieces are placed every eight feet or so. These pigeon-hole openings act in unison, or independently of cross drains in the bed. When used thus simply, care must be taken that the earth, &c., inside are nine inches or so higher than the pigeon-holes, and are made firm, and closely pressed to the walls; otherwise, the steam from rank dung passing through would destroy the plants. Some, to remedy this, sweeten the dung before using it for linings; but this involves much labour. By this process, the artificial heat you get in the atmosphere of the pit must pass through the soil. To secure top heat as well, some have a lining of slate inside the pigeon holes, and separated two or three inches from the inner wall, and rising to near the height of the walls, so as to let the heat from the linings up to heat the air in the house.

Tin and sheet-iron have been used instead of slate. Were I heating a pit in that mode, with the exception of some openings to communicate with cross drains near the bottom of the interior, I would build the walls of solid four-and-a-half-inch work, or, better still, of hollow nine-inch work, and the heat from the linings would rise to the height of the walls, if a few small openings were made inside to prevent the air being confined. In this case, provided the openings for the interior cross drains were made steam and air-proof, no steam could get into the hollow walls; and thus, both bottom and top heat would be secured, though dung or short grass were used just as it could be obtained.

V. Early Melons by dung heat, and neatness no great object. In this case I would have single-brick-on-bed walls, with nine-inch piers every eight feet; would sink or have the bed above ground, according to circumstances, as to freedom from water; would use sweetened dung and leaves inside to start with, supported on a bed of faggots or stones; would have the outside linings rather lower than the bottom of the stones or faggots inside; and would continually add to the lining when necessary, until it was nearly as high as the top of the walls. This would secure both top and bottom heat in plenty. If bed and lining were entirely on the surface, wattled or thatched hurdles would be useful for protecting the linings. Even in winter, such linings, after they had heated themselves dry, would be a good protection; and if even they yielded a little heat, that would enable you to give more air, and thus tend to the benefit of the plants inside. A great benefit of close over pigeon-holed walls, is, that you need not trouble yourself about the sweetness of the dung you use outside. In fact, at one time, I used such close-walled pits merely as my preparing heaps for inside work, and thus lost nothing of the heat from preparation, bringing fresh and green manure as the sweet was removed. I begin to fear that so much hot water will spoil young gardeners for attention to little matters.

VI. The best arrangements for such a combined purpose, where cost in the first instance is a matter of little consideration, provided comfort and efficiency be secured. These, in unison with pleasant interest, are always best attained when we can get among our plants, and attend to them, without pulling and rattling at sashes in order to get at them, and allowing the plants to suffer, because it is too stormy to open the lights and attend to them. Here is a nice place facing the south, nine or ten feet wide; and with a wall behind it, too, some eight feet in height. Well, instead of a narrow pit with walks round it, make a wide pit or house, and the walk in the middle of it. Suppose you take in nine feet, that will give you a platform of three feet three inches on each side, and a pathway of thirty inches. If you put hot-water pipes for bottom heat, front and back, the front would do for Melons to fasten to a trellis to the top of the house; and the back would do for a propagating place in spring and summer. With only the front bottom-heated, the back would do without heating for growing Achimenes, Gloxinias, &c., before the Melons quite covered the roof. The pipes for top heat need only be used in winter. If two four-inch pipes went along the front for top heat, and returned beneath the front platform, that would be enough heat for moderately early Melons in summer; and in winter the pipes in the bed could also be exposed. As an improvement even upon this, what I should like to have myself would be a span-roofed house, facing east and west, from nine to twelve feet wide; height to ridge from floor of passage, about eight feet; height of side walls, from five feet; walls separating passage from walk on each side; pipes for bottom and top heat on each side—the latter only to be used for greenhouse plants in winter; air given at the ridge, and side walls; half of these walls, and inside of the house, to be below the ground level; and a trellis on each side for plants from fifteen to eighteen inches from glass.

R. FISH.

SUMMERFIELD,

THE SEAT OF HORATIO MICHOLLS, Esq.

THIS residence is near Bowden,—and Bowden is an ancient village,—situated in Cheshire, about seven miles from Manchester. Round it there are numerous villa residences. The place is famous on account of its venerable church, said to be one of the oldest in England.

I had occasion to visit the place a few days ago. I travelled by the Altringham railway from the Oxford Road station, Manchester, which brought me within a mile of Bowden. The rail runs through a rather flat district, thickly studded with villas and market-gardens, especially near Altringham, famous for its Carrots. The object of my short trip was to see Summerfield, my friend Mr. Baines, the gardener there, and his fine collection of Orchids and variegated plants. His employer, Horatio Micholls, Esq., is an enthusiast in gardening, and spares no expense in purchasing rare and beautiful plants, and putting up suitable habitations for them. I found every part in good order, and the plants well managed. Mr. Baines, like his employer, is a true lover of plants, and is very successful in their culture. Indeed, I never knew a gardener, who was fond of plants, that did not succeed in growing them well, if he had the means, and a liberal employer to back him. At this time of the year, indeed, there is not much bloom to be seen; but a practised eye could easily see that the plants would bloom well in due season.

The mansion stands on a commanding eminence. In clear weather, the spectator has a very extensive prospect before him; extending, it was told me, for thirty miles, and embracing no less than seven counties in the view. It is, happily, out of the reach of the Manchester smoke; and, as the soil is dry, many evergreens thrive luxuriantly. The first hothouse I entered is devoted to the Vines, which were at rest, and kept so by being trained outside. The front windows are moveable, and are brought inwards about nine inches. The Vines, consequently, are protected from heavy snows or rains, and, in a great measure, from frost, by the projecting roof. This arrangement enables the gardener to make use of the house for forcing purposes. I observed some large bush Roses in a healthy forward state, full of bud; also other things, such as Fuchsias, Lilacs, &c., all being brought forward for early bloom. The value of such a house can scarcely be overrated. The plant-houses adjoin this viney. They are all low and span-roofed, and placed so that each has a communication with the other. I noted a cool and a warm Orchid-house; another devoted to variegated plants and Ferns; another to specimen Geraniums; and another to the better kinds of stove shrubs, such as Ixoras, Allamandas, Franciseas, Dipladenias, and such like. In the centre of the house there is a pit filled with tan; which is a great advantage to these plants, by affording bottom heat to the plants when they are making their summer growth. And then I was shown a house filled with specimen Azaleas, well set with bud. Mr. Baines gives his Azaleas a rather strong heat when growing, in order to cause abundance of bloom, and is very successful thereby. Lastly, I saw a house filled with young specimens of New Holland plants. Boronias, Aphelexis, Polygalas, Pimeleas, and others are thriving well; and a good foundation laid, by careful training, to make them handsome plants.

From the houses we took a stroll through the pleasure-ground. Here I found a flower garden laid out for bedding plants. It is as all such gardens should be—situated near the house, but on a level considerably lower; so that, when standing on the terrace-walk, every bed and colour of the flowers is seen like looking at a map.

Adjoining the house is a handsome conservatory; well furnished, when I called, with Camellias, Epacries, and other early-blooming plants. The *Veronica Andersonii* is

highly valued here for its early and productive bloom. Besides these hard-wooded plants, there were plenty of forced flowers, Hyacinths, Tulips, Crocuses, Cyclamens, which altogether made quite a gay appearance.

From the pleasure-ground we made our way, between some rockwork, to the kitchen and fruit garden. I observed a trellised walk, six feet wide, covered with the best kinds of Pears, very healthy, and full of fruit-buds. To walk under this arched trellis in summer, when the trees are full of luscious fruit, must be a treat indeed. The mild winter has had the effect of bringing the buds very forward. Some *Jargonelle* Pears were quite ready to burst forth into blossom. I much fear that fruit blossoms this year will suffer from late frosts. Every gardener ought to take Mr. Errington's advice, and retard the flowering of his wall trees as much as possible.

The wall trees at Summerfield are all tied to wires fastened in lines to the walls, and have a neat, clean appearance. No shreds of cloth (often a harbour for insects), are to be seen; neither are there any nail-holes in the wall. Every way, this method is greatly preferable to the older and common one of using nails and shreds in training the trees.

The above is a brief and general description of this beautiful and interesting place. I took a few notes of the most interesting plants there, with which I must conclude my report.

Hydrangea Japonica variegata.—There are two distinct varieties of this fine variegated plant. One is the common one, with blotches of white on its leaves; the other has blotches of a golden hue, and margined with the same colour.

Maranta vittata.—This is a large-growing hardier variety than *albo lineata*, and is far more effective.

Aralia lepidophylla.—A fine-foliaged plant, with the veins and midrib tinged with rose colour.

Vriesia splendens.—A bromeliaceous plant, with the leaves banded with dark purple. It has, when in bloom, a tall spathe formed of scarlet bracts, out of which spring white blossoms. It is a handsome variegated plant, introduced from Rio Janeiro in 1847.

Diffenbachia picta.—This variegated plant has the colouring more vivid here than I have ever seen it elsewhere. The reason, I was told, is, because the plant is grown in almost pure sand.

Solanum purpuratum.—This is a quick-growing, fine-foliaged plant; the underside of the leaves being of a rich purple, and very spiny.

Anactochilus (many species).—They are here exceedingly well grown; and are cultivated in wide, shallow pans, covered with bell-glasses, in sphagnum, sand, and fibry peat. The latter had been dried, and all the earthy, dusty parts sifted out.

Bilbergia Morelliana.—Introduced from Brazil by Morel Keteler, of Paris, in 1848. The leaves are long and drooping, and broadly barred with silver. The fine bracts are red, and the flowers purple, tipped with yellow. It is the finest of the tribe as a fine, variegated-foliaged plant.

Besides these, I noted fine specimens of the handsome Crotons, Dracaenas, and other variegated plants.

Among the Orchids were the *Calanthe vestita*, in both varieties, grown here in rich loam; and finer pseudo-bulbs I never saw anywhere. Many of them are as large as a goose-egg. I am certain Mr. Baines' way of managing them is a good one.

The fine species, *Lycaste Skinneri*, in three varieties, was in bloom, and was remarkably strong; caused, I was told, by mixing dried cakes of cowdung among the peat.

I saw an imported specimen of the *Phalaenopsis grandiflora*—the Bornean variety. Three plants were on the native block. This is the finest plant of the kind in Great Britain. Mr. Baines prefers the method of growing it on a block; setting the block among moss, which is practised by most cultivators.

There is also a fine specimen of *Ansellia Africana*, grown in a large pot. I counted fifteen spikes, all much branched; and every branch thickly covered with flowers. It really is a fine winter-flowering Orchid.

Calogyne cristata.—A large plant, with many spikes of its beautiful white blossoms.

Laelia purpurata.—Mr. Micholls has imported a large number of this beautiful species, and has many large specimens now in fine health: they flower abundantly at the proper seasons. The East Indian Orchids, such as *Aerides*, *Vandas*, *Saccolabium*, &c., are grown, as they should be, in a house by themselves. *Vanda suavissima* was in flower.

Many more plants are worthy of notice; but my allotted space is full. I can only say, I was highly gratified with all I saw; and anyone desirous of seeing plants well grown should pay a visit to Summerfield.

T. APPLEBY.

DIOSCOREA BATATAS AND ITS COOKERY.

I GREW a root of the *Dioscorea* in 1857 and 1858, but my system of culture was so nearly like Mr. Weaver's, that it would only be a repetition of what has been already stated; but, unlike his, the roots were quite straight, and measured three feet one inch in length, and weighed 44 lbs. The soil is a stiff clay; has been trenched two spades deep, four years ago, but below that it has never been known to have been moved; notwithstanding which, the *Dioscorea* had gone down into the hard yellow-clay subsoil eighteen inches. So hard was the clay, that I was obliged to grub the root out with a pickaxe. Thus showing that it is not very particular as to soil. But what surprised everyone who saw it was, how such a fleshy tuber could penetrate such a hard subsoil.

I have no doubt many persons who grew this about four years ago, were disappointed with it; as, owing to the smallness of the tubers sent out, many of them did not grow at all, and others did not reach the size the cultivators were led to expect: so that it is not so much known as it deserves to be.

I think that it is equal, if not superior, to the finest Potato, either baked, steamed, or boiled, and may be put in the water cold, or boiling, just the same as a Potato; and, I think, nine persons out of ten would not know the difference when cooked, if they were not told.

As I have not seen any directions in THE COTTAGE GARDENER how to cook it, I beg to hand you the following:

As said before, it may be steamed, baked, or boiled; but the latter is the most simple. Wash and scrape, clean, or peel, the tuber; put it in a saucepan with cold, or boiling, water; set it on the fire and boil about ten minutes; try it with a fork, and, when soft, strain off the water. Tilt the lid on one side; set it on the hob to allow the steam to go off; and then serve like mashed Potatoes, with, or without, butter. Every one who has tasted it here has pronounced it equal, if not superior, to the finest Potato they ever tasted.

The only question is, whether it will pay for growing. This must be expensive, on account of the deep trenching; but I think this would be paid for in the superior crops that would follow, as, once in the ground, you must dig deep to get them out. As good roots can now be had cheap, I would advise everyone to try them. They do not blight, and keep well, may be stacked away in a cellar like cord wood, and are said to be quite hardy.—W. SALCOMBE.

ASCERTAINING THE HEIGHT OF TREES.

OBSERVING in your Number (February 22), an answer to a question of "X. Y. Z." as to the mode of ascertaining the height of a tree, I beg to offer you a plan far more simple, and being available whenever there is any shadow.

Insert your walking stick into the ground; measure the length of the shadow made by it, and see what proportion it bears to the height of your stick. Then measure the length of the tree's shadow, and in the same proportion it will give you its height.

For instance: suppose your stick is two feet long out of the ground, and the sun should be in such a position as to make the length of the shadow six feet, or three times the length of your stick. Then measure the tree's shadow, and suppose it to be ninety feet, the tree will be thirty feet high.—W. A. E.

COMMON PRACTICES.

(Continued from page 350.)

POTTING, AND REPOTTING.—The first, at this season, has reference, chiefly, to seedlings and cuttings sufficiently rooted to require a pot for themselves. The second applies to plants where the pots are already filled with roots, and require more room for extra growth. The mode of doing all these things, the necessity of clean pots and good drainage, have been often alluded to. Disappointments frequently ensue, because we either do not think of it, or forget that our object in these cases is to get the plant to grow quickly, and with as little check as possible. Every potting and repotting will, so far, give a check; because the action of part of the roots is, at least, temporarily arrested. The check should be counterbalanced, not encouraged. A clergyman's wife informed me, that none knew more about gardening than her worthy husband, and I believe she stated nothing but the truth. His attention, however, was concentrated upon more important objects; and then, sometimes, he would do things among his plants that he could hardly believe were done by his own hands. How many of us act without thought or consideration, and have nothing of the clergyman's excuse! Carelessness, and want of thought, are often more injurious than downright ignorance. There is a man potting Cinerarias; you can see their leaves flagging before potting, as they stand on the potting-bench. You find, by your fingers, and turning a ball out, that the soil is dry and parched; but in they go as they are. Then, when for weeks after, they flag every sunny day, and get fine green flies on them in flocks, and will not hold up their heads, though the new soil, in the new pots, is kept soaked. The potter would, very likely, take it as an insult, if you were to hint that he might have prevented these misfortunes, if he had given his plants a good soaking a number of hours before potting. Before the roots get into the moist new soil, most likely the plants would lose all the best of their leaves; as it would be long, long indeed, before any more watering would enter the dried-up old ball, so long as it could get along and away through the fresh loose soil.

Again. Here are half-a-dozen plants brought from a temperature of above 60°; placed in a potting-shed at 40°; allowed to stand there until all have their turn of repotting in soil about 40°; and then are carried back to their old place, after the operator has gone to, and returned from, dinner; and then, very probably, water is given, to make all right, at a temperature of 45°; then there is such wondering when insects and yellow leaves are more plentiful than desirable. The repotting alone would be a check; warm, well-aired soil; a warm place to perform the operation in, or keeping the plant as short a time as possible in a cooler place; using water even warmer than the temperature of the house; sprinkling the leaves to prevent evaporation; and keeping the house closer to encourage fresh rooting, would minimise the effects of the check of repotting; and seem so apparent, that the surprise is, that the very opposite is so frequently adopted.

Once more. A person gets a basket of bedding plants in March, nicely-rooted Verbenas, scarlet Pelargoniums, &c.; and, to save expense, the earth has been pretty well shaken from the roots, and these, laid in moss, are all sent, at little expense, in a small basket. He knows that these stood in small pots,—and had plenty of air and little water,—in the front of a cool greenhouse. He pots, and places, his plants in a similar position. The plants have roots, and must succeed as well with him as in the place they came from. He cannot think what can be the reason why the Verbenas lose their leaves, and the Geranium foliage gets yellow and woe-begone, and that even the life-nourishing air, when given in plenty, makes them worse and worse. He has a shallow pit, where a bottom heat of 60°, or so, could be commanded from old leaves, &c., and could be kept moist and close, and even shaded at pleasure. If the

plants had not been too long packed, were potted in nice light soil, were plunged, as to their pots, not over watered, but sprinkled from the syringe two or three times in a sunny day, were slightly shaded when very bright sun, and the frames kept nearly close for a fortnight; and then air admitted, little at first, and then more by degrees, hardly a leaf need have been lost. By that time the pots would have been so filled with fresh roots, that the plants would not disagree with any place, however exposed, if they were only secure from frost. I should not, however, be surprised, if, after digesting all this, some friend, after placing his new-potted plants in such a pit, were to pull off the lights in a sunny day, in order that the plants might have all they could get of a good thing. It would be well to recollect, that every fresh-potted plant, even when it has a ball,—and more especially if without a ball,—and in full growth, has received a check, which, for a time, prevents the roots absorbing as freely as the leaves and stems perspire. A little shade in bright sunshine, and a close, moist atmosphere, will lessen perspiration until the roots have regained the equilibrium. When that is the case, air and light must be given; or there would be spongy, instead of stubby, fruitful growth. R. FISH.

THE SCIENCE OF GARDENING.

(Continued from page 351.)

ACCORDING to the usual acceptance of the term, the roots of plants do not emit excrements; yet it is quite certain, that in common with all the other parts of a plant, they emit matters differing in their amount and composition. The earth in contact with the tubers of a Potato fully ripe contains mucilage, and has the peculiar odour of the root; that in contact with the roots of Peas is also mucilaginous, and smells very strongly of that vegetable; and the freshly up-turned soil where Cabbages have been growing always smells offensively.

In addition to this, every gardener knows that the vigour and luxuriance of a crop are influenced remarkably by that which immediately pre-occupied the ground on which it is growing; and this does not arise entirely from the previous crop having robbed the soil of constituents required by its successor, but from that crop having left something offensive. Thus, the Cabbage-worts will not grow healthily upon soil where the immediately-previous crop was of the same tribe; but if the ground be pared and burnt, they will grow luxuriantly. And the same occurs to ground exhausted by Strawberries: if it be burnt and manured, Strawberries will grow as vigorously as upon fresh ground; but they will not do so if manure only be applied. It has also been observed that the roots of plants placed in water give out their characteristic flavour to the liquid; but on this, as evidence that they emit excrements, no great reliance can be placed, for some of the roots, during removal from the soil, must be wounded.

The fact that the roots of plants do give out peculiar and varying matters to the soil which sustains them, aids to explain why one rotation of crops is superior to another, as well as why fallowing is beneficial.

Fallowing gets rid, by decomposition, of any offensive excrementitious matters, as well as accumulates that which is desirable to plants; and one crop succeeds better after some predecessors than others, because their exuviae are more salutary.

These facts are all explicable by the supposition that roots emit into the soil various excrementitious substances. Let us next inquire whether they do so has been substantiated by direct experiment.

M. A. P. De Candolle, in his "Vegetable Organography," says that "these excretions of roots have been particularly seen by Bruemans;" but we are not acquainted with his researches. MM. Bacquerel and Macaire found when Barley and other grain were made to vegetate in pure chalk, acetate of lime was formed in it, evidently by acetic acid (vinegar) being emitted by the young roots, and this combining with the lime of the chalk.—(*Ann. de Chimie et de Phys.* iv.).

M. Braconnot washed the soil in which the Poppy (*Papaver somniferum*) had grown during ten years successively, and obtained from it a considerable quantity of acetate of lime.—(*Ibid. lxxii.*)

Mr. Lymburn says, "On lifting up a bed of two-year seedling

Scotch Firs, or two-year seedling Spruces, the ground around the roots is filled with the excrement. In the Scotch Fir it assumes a white colour; in the Spruce it has a yellow colour; and in both is fibrous. I have found in practice, that, in sowing seed-beds, or transplanting trees into lines, Larch sown or planted after Spruce have nearly doubled the size of those planted after Larch at the same time, and from the same lot of seed or seedlings."—(*Gardeners' Magazine*, vi., n. s.)

Professor Johnston, from a series of deductions founded on chemical analyses, concludes by stating that they satisfied him "that the roots of plants do possess the power of excreting some of the substances which are held in solution by their sap on its return from the stem; and which, having performed their offices in the interior of the plant, are no longer fitted, in their existing condition, to minister to its sustenance or growth. The excretory power is not restricted to the emission of inorganic substances. Other soluble matters of organic origin, also, are permitted to escape into the soil—though whether of such a kind as must be injurious to the plant from which they have been given out, or to such a degree as *alone* to render a rotation of crops necessary, neither reasoning nor experiment has hitherto satisfactorily shown. All that we know with certainty is in favour of the opposite view. Mr. Gyde watered Bean plants, till fully ripe, with water containing the matter excreted from the roots of Beans; and these plants were slightly better in appearance than other Bean plants watered during the same time with rain water only. The excretions of the Bean's roots, therefore, do not seem to be injurious to the Bean."—(*Transac. Highland Soc.* 1845. *Johnston's Lectures on Agricultural Chemistry*.)

Liebig is clearly of opinion that the roots of plants throw out excrements. He says, "The experiments of Macaire-Prinsep have shown, that plants made to vegetate with their roots in a weak solution of acetate of lead (Gouillard's extract), and then in rain water, yield to the latter all the salt of lead which they had previously absorbed. They return, therefore, to the soil all matters unnecessary to their existence. Again: when a plant, freely exposed to the atmosphere, rain, and sunshine, is sprinkled with a solution of nitrate of strontia, the salt is absorbed; but it is again separated by the roots, and removed further from them by every shower of rain which falls upon the soil; so that, at last, not a trace of it is to be found in the plant."—(*Daubeny*.)

"When bulbous plants, such as Hyacinths, are allowed to grow in plain water, this gradually acquires a brown colour. It, therefore, cannot be denied that excrements are actually given off by plants, although, very possibly, they do not produce them in the same degree. Through the expulsion of these matters unfitted for the plant's nutrition, yet containing a large proportion of carbon, the soil receives again with usury the carbon which it had, at first, yielded to the young plants as food in the form of carbonic acid. The soluble matter thus acquired by the soil is still capable of putrefaction, and then furnishes renewed sources of nutrition to another generation of plants: it becomes humus."—(*Liebig's Chemistry applied to Agriculture, &c.*, 3rd Ed.)—J.

(To be continued.)

margin serrated, and often red. Inflorescence axillary and solitary. Calyx deeply divided into five oblong, lanceolate, externally red segments. Corolla consisting of six round, concave, undulate, and crenate petals. Stamens united in a short tube. Filaments subulate, spreading. Anthers round, orange colour. Germen ovate, five-angled, hairy. Pistils five, free, subulate, and somewhat decurved.

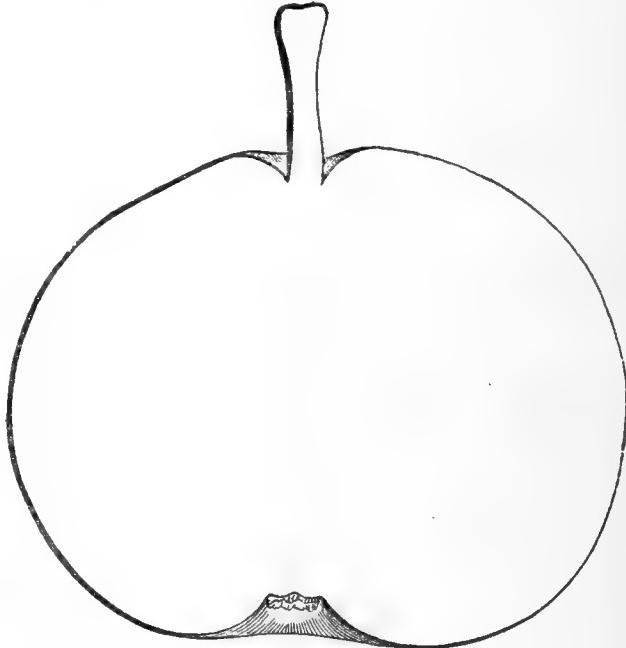
A very useful and rare hardy deciduous shrub. The flowers are large, white, and richly produced in July and August. It prefers a moist, rather than a dry soil, with a good deal of vegetable matter contained in it, as from peat or leaf mould. Usually propagated by layers.—S. G. W.

FRUITS AND FRUIT TREES OF GREAT BRITAIN.

(Continued from page 341.)

No. XV.—BERGAMOTTE D'ESPEREN PEAR.

WE noticed (March 1), a pear which we recommended as one of the best for late winter use; and this week we add another to the list, even better. It is one of those excellent sorts raised by Major Esperen, of Malines, which will, the better it is known, establish itself as a permanent favourite.



Fruit slightly fragrant; above medium size, two inches and three-quarters wide, and two inches and a quarter high, and true Bergamot shape, even and regular in its outline.

Skin coarse, at first of a dark-green colour, covered with large, brown russet dots; but, as it attains maturity, it assumes a dull greenish-yellow hue, and the numerous large russet dots become grey; sometimes, on the side that has been exposed to the sun, it assumes a faint orange tinge.

Eye small and open, with a dry, rigid, horny calyx, of no regular form; set in a pretty deep, wide, and even basin.

Stalk three-quarters of an inch long, stout, and somewhat fleshy at the insertion, and placed in a small, narrow cavity.

Flesh yellowish, fine-grained, quite melting, very juicy, and sugary, with a pleasant aroma.

A most delicious late pear, coming into season from about the middle of February, and lasting till April. A fit successor to Winter Nelis. It was raised from seed, about the year 1830, by Major Esperen, of Malines.

PINE CULTURE ON THE PLANTING-OUT SYSTEM.

VARIOUS are the structures in which Pines are grown. Some are grown in houses under Vines; others are grown in pits, and removed from thence to the fruiting-house or stove, which is attended with a great deal of labour and expense, and, moreover,

NOTES ON NEW OR RARE PLANTS.

ACACIA PROMINENS, *A. Cunn.* Nat. ord., *Leguminosæ*. Native of New South Wales.—Habit erect, moderately compact, branching copiously. Branches slender, somewhat angular, smooth green. Phyllodiae (leaves) numerous, alternate, linear lanceolate, acute, frequently falcate, mucronate, and upon the margin near the base bearing a prominent gland. Inflorescence in short axillary racemes. Heads of flowers solitary, or in pairs, with spreading, smooth pedicels, based by minute brownish bracts. Calyx divided into five diminutive segments. Corolla small, composed of five ovate, erect petals. Stamens numerous, short. Style rather longer than the stamens, supporting a single stigma.

This species attains the height of eight or nine feet; and with judicious management of stopping and tying, may be furnished with flowering shoots from near the base to the top. It is, however, from its size, better suited for conservatory decoration, than being tenanted in the ordinary-sized greenhouse. It blooms profusely, and long in continuance in the spring months. Seeds are the best means of propagation.

STUARTIA PENTAGYNIA, *L'Herit.* Nat. ord., *Ternstroemiaceæ*. Native of Carolina and Georgia.—A freely-branching, deciduous shrub. Branches round, smooth, and reddish on the younger portions. Leaves alternate, ovate, acuminate; veins prominent;

a good deal of damage to the plants. In order to facilitate this moving, the leaves have to be tied up; which cannot be done to strong, healthy plants without, to some extent, cracking or damaging the leaves, which soon causes them to have a sickly, unhealthy appearance; and, if left untied, the points of the leaves are apt to be broken, which disfigures the plants as long as they live. But this is not all: they have to be shifted into various-sized pots, which operation cannot be done without a great deal of damage to the roots, as these, when in a healthy state, are brittle. Then they have to be plunged in tan, or some other fermenting material; and, if not watched with a careful eye, are apt to be burned at the roots. Then there are a wading amongst them, and tilting them up; and after the heat declines to its proper temperature, there is another wading to let them down to their proper place; which operations never diminished the already-bruised leaves. But the greater part of the labour, damage, and expense is terminated by the planting-out system.

The form or size of the structure for carrying out this entirely depends on the taste of the proprietor. A span-roofed house is the best for obtaining an abundant supply of light, which is so essential to the welfare of the Pine. The ends should stand south and north; and so situated, that it may be under the full power of the sun from its rising till its going down. Plenty of provision should be made for the admission of air, both at top and bottom; making the air admitted at the bottom to pass over the heating pipes before coming in contact with the plants. The pipes for heating the beds should not be more than eighteen inches below the surface. They should be imbedded in rough gravel to the depth of four inches: over that should be placed a turf, grassy side undermost; and over that should be placed twelve inches of the following compost:—To every eight barrowfuls of turf loam from an old pasture add a good barrowful of sheep dung, and another of broken bones, from an inch to an inch and a half square, well mixed together some time previously to its being used. The bones tend to keep the soil open. The turf loam should be chopped from two to three inches square. The compost being put in to the above depth, then follows the planting.

The strongest and best-shaped of the suckers, or plants, should be selected. The small sorts, such as *Queen's*, should be planted two feet from plant to plant each way; but the black ones, such as *Black Jamaica*, *Montserrat*, and *Cayennes*, which grow to a larger size, may be planted two feet and a half each way.

After planting, if the soil is at all moist, it is only necessary to give the plants a slight damping overhead, and to keep the house pretty moist, close, and shaded for a few days, until the plants commence growing; after which, they may have a more liberal supply of light and air. Then, they ought to have a watering at the root sufficient to moisten the soil through, and no more. Plenty of provision should be made at the bottom of the bed to drain away all superfluous moisture. Keep the house moist at all times, by damping the passages and every available surface that will hold moisture; and by sometimes giving the plants a slight syringing overhead, but not to that extent that water will stand continually in the heart or axils of the leaves; as this would cause the plants to have a sickly appearance, and may cause the fruit to start prematurely, or without crowns.

Do not allow the plants to receive any check for want of moisture at the roots; as this is injurious to them at all times, more especially after they are started into fruit, and deformed fruit will be the consequence. When they are growing freely, a little manure water may be to their advantage.

The temperature of the house should never be lower than 55°; and should never exceed 85° or 90°, with sun heat. But it is a rule-of-thumb practice to be fixed to any degree of temperature; let the amount of light be our guide. Air ought to be admitted on all favourable occasions; at night, also, if the temperature of the house will allow it—and good plants and good fruit will be the result.

I had almost forgotten to mention that the surface of the beds should not be an inch below the bottom of the side-glass; and that over the surface of the beds should be spread two inches of old tan, to prevent a hard crust forming on the top from the various waterings.

In connection with the above house, or houses, should be a small succession-pit for suckers, which ought to be potted into five or six inch-pots, plunged in old tan, and heated by hot-water pipes. These young plants will take the place of any that may become unhealthy, or prematurely start into fruit. And when any of the fruit is cut, the old plant may be pulled out, and the soil in which it was growing then filled up with fresh soil, as far

as possible without injuring the roots of the other plants, and a young plant taken out of the succession-pit to fill its place. This may be practised for years, until a good many fruit ripen off together; then they all may be taken out, the bed filled with fresh soil, and the plants that have not swelled their fruit put back into their places, and the rest of the bed filled up with young plants and suckers out of the succession-pit.—JAMES REID, *Sudbury, Derby*.

FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 354.)

GOOSEBERRIES.

ROARING LION (Farrow's), L.P. (*Great Chance*).—Very large, oblong. Skin red, and smooth. A second-rate variety as to flavour, but one of the largest in size. Bush pendulous.

ROB ROY.—Medium sized, obovate. Skin red, and hairy. A first-rate variety, and very early. Bush erect.

ROCKWOOD (Prophet's), L.P.—Large and roundish. Skin yellow, and hairy. Flavour second-rate. Bush erect.

ROUGH RED (*Little Red Hairy*; *Old Scotch Red*; *Thick-skinned Red*).—Small and round. Skin red, and hairy. A first-rate variety, of excellent flavour, and highly esteemed for preserving. Bush spreading.

Rough Yellow. See *Sulphur*.

Round Yellow. See *Rumbullion*.

ROYAL WHITE.—Small and round. Skin white, and hairy. A first-rate dessert variety. Bush erect.

RUMBULLION (*Yellow Globe*; *Round Yellow*).—Small and roundish. Skin pale yellow, and downy. Flavour of second-rate quality. Bush erect, and a great bearer; and the fruit much grown for bottling.

RUMBULLION, GREEN.—Small and round. Skin green, and hairy. Flavour second-rate. Bush erect.

SCOTCH NUTMEG.—Medium sized, roundish. Skin red, hairy, or downy. Flavour second-rate. Bush erect.

SHAKESPERE (Denny's), L.P.—Large and roundish. Skin red, and hairy. Of first-rate flavour. Bush erect.

SHEBA QUEEN (Crompton's), L.P.—Large and obovate. Skin white, and downy. Flavour of the first quality. Bush erect. Very similar to *Whitesmith*.

Sir Sidney Smith. See *Whitesmith* (Woodward's).

Small Dark Rough Red. See *Small Rough Red*.

SMALL RED GLOBE (*Smooth Scotch*).—Small and roundish. Skin smooth, and red. Of first-rate quality, and with a sharp, rich flavour. Bush erect.

SMALL ROUGH RED (*Small Dark Rough Red*).—Small and round. Skin red, and hairy. Of first-rate quality, and early. Bush spreading, and the leaves pubescent.

SMILING BEAUTY (Beaumont's), L.P.—Large and oblong. Skin thin, yellow, and smooth. Of first-rate flavour. Bush pendulous, and a good bearer.

Smooth Amber. See *Amber*.

Smooth Green. See *Green Walnut*.

Smooth Red. See *Turkey Red*.

Smooth Scotch. See *Small Red Globe*.

SNOWBALL (Adams').—Medium sized, roundish. Skin white, and hairy. Of first-rate flavour. Bush pendulous.

SPORTSMAN (Chadwick's), L.P.—Large and obovate. Skin dark red, and smooth. Flavour second-rate. Bush spreading.

SULPHUR (*Rough Yellow*).—Small and roundish. Skin yellow, and hairy. Flavour of first-rate quality. Bush erect, and the leaves not pubescent, by which it is distinguished from Early Sulphur.

Thick-skinned Red. See *Rough Red*.

TOP SAWYER (*Capper's*), L.P.—Large and roundish. Skin pale red, and hairy. Flavour of second-rate quality. Bush pendulous.

TURKEY RED (*Smooth Red*).—Small and obovate. Skin smooth, and red. Of first-rate flavour. Bush spreading.

VICTORY (*Lomas'*), L.P.—Large and roundish. Skin red, and hairy. Of second-rate flavour, but much esteemed for cooking. Bush pendulous.

VICTORY (*Mather's*), L.P.—Large and obovate. Skin yellow, and smooth. Flavour only second-rate. Bush spreading.

VIPER (*Gorton's*), L.P.—Large and obovate. Skin greenish yellow, and smooth. Flavour second-rate. Bush pendulous.

Volunteer. See *Red Warrington*.

WELLINGTON'S GLORY, L.P.—Large and roundish-oblong. Skin thin, white, and downy. Flavour of first-rate quality. Bush erect.

WHITE CHAMPAGNE.—Small and roundish-oblong. Skin white, and hairy. Flavour of first-rate quality. Bush erect; leaves pubescent.

WHITE EAGLE (*Cook's*), L.P.—Large and obovate. Skin white, and smooth. Flavour of first-rate quality. Bush erect.

WHITE FIG.—Small and obovate. Skin white, and smooth. Flavour of first-rate quality, and rich. Bush spreading, but tender.

WHITE LILY.—Medium sized, obovate. Skin white, and downy. Flavour of second-rate quality. Bush erect.

WHITE LION (*Cleworth's*), L.P.—Large and obovate. Skin white, and downy. Of first-rate quality, and a good late sort. Bush pendulous.

WHITE RASP.—Small and round. Skin white, and smooth. Flavour of second-rate quality. Bush spreading.

WHITESMITH (*Woodward's*), L.P. (*Whitesmith*; *Sir Sidney Smith*; *Hall's Seedling*; *Lancashire Lass*; *Grundy's Lady Lilford*).—Large, roundish-oblong. Skin white, and downy. Flavour of first-rate excellence. Bush erect, and a good bearer.

WILMOT'S EARLY RED.—Large and roundish-oblong. Skin dark red, and smooth. Of second-rate quality. Bush pendulous.

WISTASTON HERO (*Bratherton's*), L.P.—Large and oblong. Skin green, and hairy. Flavour second-rate. Bush erect.

Yates' Royal Anne. See *Riflemen*.

YAXLEY HERO (*Speechley's*), L.P.—Large and obovate. Skin red, and hairy. Flavour of first-rate quality. Bush erect.

Yellow Amber. See *Amber*.

YELLOW BALL.—Medium sized, roundish. Skin yellow, and smooth. Flavour of first-rate quality. Bush erect.

YELLOW CHAMPAGNE (*Hairy Amber*).—Small and roundish. Skin yellow, and hairy. Of first-rate excellence. Bush erect.

Yellow Globe. See *Rumbullion*.

YELLOWSMITH.—Small and roundish-oblong. Skin yellow, and hairy. Of first-rate quality, resembling *Yellow Champagne*. Bush erect.

YELLOW WARRINGTON (*Yellow Aston*).—Middle sized,

roundish-oblong. Skin yellow, and hairy. Of first-rate quality. Bush pendulous.

York Seedling. See *Glenton Green*.

SELECT GOOSEBERRIES.

FOR DESSERT USE.

Red.

Ironmonger	Red Warrington
Keens' Seedling	Rough Red
Miss Bold	Scotch Nutmeg
Raspberry	Small Rough Red
Red Champagne	Turkey Red
Red Globe	Wilmot's Early Red

Yellow.

Early Sulphur	Rumbullion
Glory of Ratcliff	Yellow Ball
Rockwood	Yellow Champagne

Green.

Green Gascoigne	Heart of Oak
Green Prolific	Hebburn Prolific
Green Walnut	Pitmaston Green Gage

White.

Bright Venus	Hedgehog
Crystal	White Champagne
Early White	Whitesmith

FOR EXHIBITION. WITH THEIR GREATEST WEIGHTS.

Red.

Dwts.	Grs.	Dwts.	Grs.
Companion	25	27	12
Conquering Hero	22	23	0
Lion's Provider	23	4	18

Yellow.

Dwts.	Grs.	Dwts.	Grs.
Catherine	27	14	24
Drill	23	18	0
Gunner	20	14	14

Green.

Dwts.	Grs.	Dwts.	Grs.
General	20	2	7
Gretna Green	18	21	13
Over-All	21	0	0

White.

Dwts.	Grs.	Dwts.	Grs.
Eagle	18	10	22
Freedom	23	16	4
Lady Leicester	22	7	12

(To be continued.)

FLOWER GARDEN DESIGNS.

It is at all times mortifying to a garden architect, or landscape gardener, to find that his design was executed so far as the creation of the object intended was concerned, but in the subsequent planting or carrying out of that object it is often sadly marred. This is more especially the case with ornamental flower gardening of an intricate kind; in which the planting obliterates almost all traces of the figures intended to be shown—or so far distorts them, that their proper shape is lost. This misfortune is not wholly due to the poor gardener: for it is utterly impossible to plant some designs with the fashionable flowers of the present day without, in a great measure, obliterating the fanciful scrolls, acute angles, and other intricacies, which some designs consist of; as no plant higher than a common Daisy can be planted in such places without, in some degree, concealing a portion of the groundwork adjoining them, when looked at in an oblique direction, more or less approaching to the horizontal, which all flower gardens are.

I have seen the intervening spaces of turf running into a fan some six or eight feet, and yet not be more than one foot wide at the broadest end, and a mere point at the other. In a picture, such a figure may look very well; but it is utterly impossible to maintain the true shape of the bed when it is planted and in

flower, besides the difficulty in maintaining the exactness of turf-edging, when so very little is to work upon. A scroll is not much better; and long pointed forms are, of course, equally objectionable.

In condemning this class of gardening, I am aware I am opposing what is said to be the rising fashion of the day, and consequently must qualify my observations; but I only ask those sceptical of the effects of this embroidery, to look at any garden so done in the month of August or September, when flowering plants are expected to be about in their prime, and judge for themselves. It is true, that where ample space is left between the figures, each one shows off better. Still, these curves and scroll-work, which the designer intended to be the most beautiful feature in the work, are lost and confused, however well it may have looked on paper, or where shown on the plain ground. But to those who may not have witnessed this, I will try and point out how an experiment may be easily made that will prove it.

Flower gardens, in a general way, are made to be more or less under the eye of the spectator. But very few, indeed, can be seen at an angle of elevation exceeding 30°; while half that is considered very favourable, and many important gardens have to be seen from their own level. But, taking the angle of 15°—which is seldom exceeded in any garden of any size—and take a plant two feet high, and see how much ground that hides from view, and you then have a fair example of the effect a flower-bed will have when the plants are fully grown. A plant two feet high will cast its shade eight feet beyond it; and it is needless to explain how much less than eight feet will destroy all effect which the outline of the flower-bed was intended to give; for, though plants lower than two feet when fully grown are often used, there are few under eight or ten inches—measuring, as is proper to do, to the tips of the flowers: and if we multiply their height by four, even their shadow is important, and damaging to a properly defined outline. The height of *Tom Thumb Geranium*, *Yellow Calceolaria*, and plants of similar growth, is seldom less than two feet, which anyone may ascertain by stooping and casting the eye horizontally over the surface of flowers; and the free-growing kinds of *Verbenas* are quite eighteen inches taken in the same way. Few flower gardens seem complete without these useful adjuncts to their beauty.

It is not my purpose here to find fault with every flower garden laid out on the geometric style, for some are very pretty. What I want to see is, more room between the beds, so as to allow each one to stand out distinct from its neighbours; and where it is intended for their outline to be distinctly kept when planted, by all means avoid acute points and angles, and all intricate curves or elaborate tracery. These things look very well on paper. Perhaps a naked bed may also look well; but the list of plants capable of maintaining it so when in a planted condition, is very limited indeed; and a good floral display is altogether out of the question.

I have been led into the above comments, in consequence of having seen several gardens where too much was attempted to be shown on a small space. Nevertheless, it is possible to accomplish a certain amount of fancy work in a garden of moderate dimensions, and that with a very good effect. The means whereby it can be done require more explanation than I have room for in the present chapter; but I will return to it the first opportunity.—JOHN ROBSON.

QUERIES AND ANSWERS.

FORMING PERMANENT PASTURAGE.

"I contemplate laying down, to permanent pasture, a thirteen-acre field. It is situate in the midland counties. It lies on the southern slope of a hill; the surface soil is sound loam, inclined to be somewhat stiff and strong; the subsoil is marl, inclined to clay. The usual time for sowing seeds here is in April and May. Circumstances will not allow me to have the field in question thoroughly cleaned and limed by that time. Can I, with any hope of success, sow in the autumn—say August or September? I wish the field to accord with ornamental grounds adjacent—sound old turf; and, without regard to expense, desire, with as little delay as possible, to bring it into conformity thereto. Will you kindly advise me as to my best mode of proceeding?"—A. B.

[As your land is not in order, and will require some preparation,

you had much better wait till the autumn. Nothing could be worse than to sow permanent pasture on land that has not been cleaned; it is beginning at the wrong end, and you can never expect to have a clean pasture afterwards. We would recommend you, if you can get possession of the land in time, to crop it with early Potatoes, which are a thorough cleansing, and, at the same time, a paying crop, and they will be off before you want to sow the seeds—say in the middle of September. Besides, the autumn is, by far, the preferable time to lay down pastures; and we would, therefore, recommend you to wait till then.]

EVERGREEN FOREST TREES FOR SMALL PLANTATION.

"Please inform me the most suitable kind of evergreen forest trees for filling a small angular plantation—about 300 yards of superficial surface. The soil is medium depth, rather moist; situation level, but open to the north and east. The site is 300 yards from the house, and conspicuous."—I. H.

[Plant it with Spruce Firs eight feet apart every way, and with another crop of Yews at regular distances between the Spruce. Keep the Yews to single leaders, and look on the Spruces as nurses for drawing up the Yews into forest fashion. When the Spruce boughs touch the Yews, shorten them; and when that will not do any longer, cut off the bottom boughs, and follow up this cutting year by year, as long as you can keep the two together. When the Yews meet, they must be thinned—first, to one-half the number, and secondly, to one-fourth. No trees are so good and so durable for such a purpose as you want as Yews; and this is the surest way of making them assume the character of forest trees in an ordinary life; and if they happen not to be in the right place for the fancy of the next generation, no trees are more valuable for screens, and for removing at that age, than Yew trees thus brought up from the beginning.]

GLORY PEA AND OTHER AUSTRALIAN SEEDS.

"Last summer, a friend sent me from Australia a few seeds of the *Glory Pea*, informing me at the same time that it was hardy, and would grow to the size of a Gooseberry bush! After a patient search in back numbers of your admirable work, I find Mr. Beaton (in No. 28, April 12th, 1849) speaks of the New Zealand *Glory Pea*, and recommends it for the back wall of a greenhouse. This sadly disappointed me, for I thought of turning it into my garden on the south wall; and have no better accommodation than a plant-room and cold pit. It is now a foot and a half high, with a leaf like a Sensitive Plant.

"I have just had several more Australian seeds given me, of which I am quite ignorant. Will you kindly tell me what treatment they require—*Cupania Zeylanica*, *Ipomoea splendens*, *Melia tenuifolia*, *Melia Australis*, *Crorea saligna*, *Phormium tenax* (New Zealand Flax)?"—QUIS.

[The New Zealand *Glory Pea*, and what we consider to be so, are identical—namely, the *Clinanthus puniceus*. If so, nothing would hardly beat it for beauty on the wall of a cool-greenhouse. And yet we should hesitate to recommend it for such a place; for if the syringe is not most unmercifully used, and full exposure to light given, it is almost sure to have whole colonies of red spider, which will by no means be confined in their ravages to the Glory plant, though they will be glad to begin there. We are also in a little doubt whether you have got the true "Parrot's bill;" for, though the foliage of healthy young shoots is nicely pinnated, the leaves are strong and leathery in comparison with the tender foliage of a Sensitive Plant. Presuming, however, that you have the true *Simon Pure*, you may rest assured that you will secure healthier shrubby Gooseberry-bush-like plants, from two to three feet or more in height, with the protection of your cold pit in winter, and placing it out of doors in summer,—either plunging the pot, or protecting the pot from the sun,—than you would do in a heated room, or a warm-kept greenhouse. You had better nip the points of your plant, in order to make it bushy; and also, if you have no more seeds, take off a couple, or three, little short pieces when you can get them—say three inches in length—and insert them in a pot in clean sand, and place a bell-glass, or a tumbler, over them, and set them in your window, and water when requisite, and shade with a bit of paper from bright sunshine. Give water, of course, as required, and edge

up the glass, half an inch or so, at night and morning, to give a little air; but shut down close before the sun strikes the window. When, by this means, you get two or three young plants, and preserve them in your cold pit in winter, then you may safely risk your favourite plant against your south wall. You do not say where you live,—whether at the Land's End or John o' Groat's, which is a matter of some moment, as we should think this plant would stand out of doors in many parts south of London; but in the latitude of London and the midland counties, it would be better for a little mulch over the roots in winter, and the protection of evergreen branches, or a mat, in winter.

With respect to the batch of *Australian Seeds*, allow us, in all friendship, to make two remarks,—first, as respects ourselves; and secondly, as respects the practice of getting seeds from friends abroad—these friends having but little knowledge of what is suited for, and what already has been received into, and is common in, this country. We might, with perfect truth, just have told you not to bother yourself with these seeds, as they would be of no use to you in your circumstances; but it is a great chance if you would have believed us, or thought we merely wished to get rid of a troublesome inquiry. Well, troublesome, no doubt, it was, and unsatisfactory, too; though we have bestowed more time in endeavouring to find what the plants really are than the seed-packets are worth five times over. We have corrected the names for you—those we could decipher. A gentleman, who proffered a great packet of foreign seeds as a mark of friendship, was so surprised, that he hardly knew whether to take it as a joke or in earnest, when told of the recorded practice of a valued coadjutor, who required a ten-pound note to accompany such seeds, in order that they might have the chance of getting a taste of British soil and water. The note should invariably be doubled when the names were only a kind of hieroglyphics. No doubt there is a charm in trying to grow what a friend's hand has gathered, and even some interest in sowing what that friend may have received from others with a high character, even though it should be home-saved seed, sent back again—the value so much increased by at least two voyages—or collected in other lands altogether; as it is no uncommon thing to find parcels of seeds sent from a particular place, though no living or dead botanist ever detected such plants in such places. Again—leaving these matters out of consideration, and all the trouble of raising, trying, and throwing away, or allowing to die, as nothing to speak about—the getting of these parcels generally costs something; the parting them among friends and some neighbouring gardeners costs something more—in the way of time and trouble at any rate; and the very acceptance of which is looked upon as a bore more than otherwise, nineteen times out of twenty. Now, in the present case, the most suitable plant for our friend is the Glory Pea; and a nice plant of that he could obtain for a shilling, and a packet of seeds for sixpence, and very likely as much information from the vendors as would prevent him wasting his resources on what would not suit him. Of course, we except seeds sent by botanical collectors.

However, if resolved to raise the seeds sent, the best thing he can do is to make one light of his cold pit into a hotbed, and sow the seeds separately in small pots. April will be a good month for sowing.]

LATE PEARS—PROTECTION FOR FRUIT BLOSSOM.

" You say, in a recent paper, with respect to Pears, ' After Winter Nellis has passed, which is generally in January, we have nothing of any approved merit, except *Beurré de Rance*, *Ne plus Meuris*, and *Easter Beurré*.' Why do you omit *Josephine de Malines*? Mr. Rivers recommends it highly; and it is one of our latest Pears."

[For several years past, we have found *Josephine de Malines* over by the end of January. It certainly is one of the best Pears of its season.]

" Again. You disapprove highly of every kind of covering for bloom which cannot be taken off and on as easily as your spectacles. At Knowsley, many of the trees are covered with a double thickness of common net: it is never removed and answers perfectly."—W. C.

[We shall be glad to hear that net preserves blossom from frost. Who has proved that it does?—E.D.S.]

NEW OR RARE PLANTS.

BEGONIA XANTHINA var. PICTIFOLIA (*Variegated-leaved, yellow-flowered Begonia*).

Received from Messrs. Jackson, Kingston Nursery. Probably a native of Assam.—(*Botanical Magazine*, t. 5,102.)

EPIGYNIUM LEUCOBOTREYS (*White-fruited Epigynium*).

Imported by Mr. Nuttall, from the Duppia Hills, of north-eastern Bengal, where his nephew found it growing on a species of Oak. A hardy, greenhouse, evergreen shrub, with white flowers, blooming in summer, and white wax-like berries in the autumn.—(*Ibid.*, t. 5,103.)

SONERILA MARGARITACEA (*Pearl-spotted Sonerila*).

" A very lovely little stove plant," imported by Messrs. Veitch and Son through Mr. T. Lobb, " from some part of India." Flowers in corymbs, pink; but the chief beauty arises from the leaves, which are dark glossy green, with pearl-like spots in rows between the veins.—(*Ibid.*, t. 5,104.)

PLECTOCOMIA ASSAMICA (*Assam Plectocomia*).

Known also as *Zalacca Assamica*. Native of eastern Bengal. It is a stove Palm.—(*Ibid.*, t. 5,105.)

DIPTERACANTHUS CALVESCENS (*Slightly-glossy Dipteracanthus*).

Native of Rio Janeiro; blossoming freely in the winter, and would, no doubt, succeed well in a warm greenhouse." Flowers pale purplish-lilac."—(*Ibid.*, t. 5,106.)

ON VINE BORDERS, AND TULL'S FIRST FARM.

IN a late paper on Vines, I mentioned that R. Crawshay, Esq. is one of our best cultivators of Grapes, without entering into any details of his plans. His greatest praise is his thorough knowledge of the nature and growth of the Vine, and his ample means of reducing it to practice. Like a true horticulturist, he knows the ground to be the stomach of plants; and that if the ground is not in proper condition they must be sickly, however well managed. On this true principle his Vine-borders were made; and I may safely say they were the best I ever saw, and think with regret that I may never see such again. Not, however, for novel construction—having no air-drains, nor heated with hot-water pipes; for at the time of which I am speaking, such contrivances were little known. But though his borders were not of that sort, perhaps they were equally good.

The subject of making Vine borders is so hackneyed, that little new can be said upon it. However, the young gardener never loses by having such subjects brought frequently before him. I have already stated, that Mr. Crawshay's Vine borders differed from all others I have seen. They were made above ground, about four feet high; composed chiefly of black, rotten, turf-y bog-soil, mixed with a good portion of rather decayed rich stable manure, varying in width according to the size of the vineeries. These vineeries were of brick, high enough in front to afford room for the borders. By this simple plan no drains were required, and the soil was of loose texture; so much so, that both the heat of the sun and the air seemed to penetrate the whole mass of rough soil which lay in front of the houses. On this I think that much of his great success depended; for it is usual to make Vine borders in pit-holes, dug out in front of the houses, and filled up with mixtures of light soil. But, however well drained they may be, it often happens that the soil soon turns sour and cold, especially if it is very rich, and consequently unfit for the roots of the Vines. Although these may thrive a few seasons in such borders, they afterwards turn sickly; though, perhaps, they would have remained longer healthy if they had been merely planted in common soil, provided it was dry, and afforded full scope for the roots.

In connection with this subject, I may remark, as regards digging out bad soil and supplying its place with better earth, this has a greater tendency to turn damp than the surrounding ground. This is well exemplified in the simple experiment of Tull; who, during a severe drought, dug a cavity about one yard deep in a ploughed field, and filled it with dry dust. In a short time it became damper than the rest of the land; which led him to think, and truly, that vapour or dews arise from the earth, especially in hot weather, contrary to the common belief of

its descending. I mention this more particularly to show that the plan of close-covering Vine borders with asphalt cloths, with a view of keeping them dry in winter, perhaps does more harm than good, by preventing the escape of vapour; whereas, a slight covering of straw or dry fern will allow it to pass off. But however this may be, Tull's experiment was intended to show his neighbour farmers the great utility of hoeing their turnips during dry weather, by which the loose soil let in the sun's rays to attract the moisture. I need hardly observe that they laughed, and called him something like a boarded-floor farmer. This might arise from Tull's having grown corn in pots or boxes in his window when a lawyer. But so true it is that "littles make meikles," for out of that simple thing sprang what is now called the drill system of farming in general practice throughout the country. For when Tull became a farmer, he recollects the quick growth of corn in his first farm in the window, after he had stirred the soil: consequently, he sowed his wheat in rows, and invented hoes of a peculiar construction, adapted to the width of the drills, to stir the soil, which brought upon him the ill will of his neighbours. I am speaking from memory, not having read Tull of late; but I trust that what I have said is correct. There seems proof of the opposition of his neighbours in the fact of some of his hoes, or forks, being found some years back in the bottom of a well where he lived.—J. WIGHTON.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE February Meeting of the ENTOMOLOGICAL SOCIETY was held on the 7th ult.; the chair being taken by Dr. J. E. Gray, F.R.S., the President, who nominated Messrs. Frederick Smith, Stainton, and G. R. Waterhouse, to act as Vice-Presidents during the ensuing year. Amongst the donations to the library, received since the last Meeting, was the "Accented Catalogue of the Lepidopterous Insects of Great Britain," jointly prepared by the Members of the Council of the Entomological Societies of Oxford and Cambridge. The authors of this work have endeavoured to render it more useful, by adding the derivations of the names, both generic and specific; and have prefixed a bibliographical and biographical list of the chief writers on the order. The monograph on the family Hispido, by Dr. Baly, and the sixteenth part of Mr. Walker's "Catalogue of the Lepidoptera of the British Museum Collection," both published by the Trustees of that establishment, were also presented, as well as the publications of the "Linnean and Zoological Societies," the "Berwickshire Naturalists' Club," the "Entomological Society of Stettin," &c.

A rather angry discussion took place, on the question of the confirmation of the minutes, between Messrs. Waterhouse and Ianson, concerning the priority of discovery of a certain minute Beetle, *Tachysus concolor*.

Mr. S. Stevens exhibited a variety of fine insects, just received from Mr. Wallace, by whom they had been collected, in Amboyna, including the gigantic *Eucheirus longimanus*. Selections from another consignment from Mr. Bates, still remaining at Ega, on the River Amazon, were also exhibited; including a considerable number of beautiful Microlepidoptera. Mr. Bates had also forwarded the nests of several species of fossorial Wasps, of which Mr. F. Smith gave an account, and which differed materially from the ordinary nests of this family in the style of their nidification; the nest of a species of Larrada being formed of the scrapings of the woolly texture of certain plants, and resembling German tinder, or sponge, beneath which several pupa-cases were found, on removing the nest from the leaf to which it was attached; whilst the nest of *Sphex Lanierii* formed a cottony tunnel within a curled leaf.

Mr. Ianson made some remarks on *Symbiotes latus*, a minute British Beetle.

Mr. White read a communication from Mr. Frimén, giving an account of his entomological captures at the Cape of Good Hope. Amongst the observations contained in this letter, the most interesting was, the fact stated concerning the very remarkable genus, *Bittacus* (one of the net-winged flies), which seizes its prey, consisting of flies, with its curiously shaped hind tarsi.

Mr. Tomkins exhibited three new British species of Moths, belonging to the remarkable genus, *Psyche*.

Mr. Logan, of Edinburgh, exhibited a number of plates, illustrating the transformations of various British species of Lepidoptera, executed with great truthfulness and beauty, and which are intended for publication as soon as a sufficient number of subscribers can be obtained.

Mr. Westwood exhibited a nearly full-grown Caterpillar, *Phlogophora metriculosa*, the angle-shade Moth, which had been found feeding on the very young shoots of the Southernwood; likewise some specimens of Book Worms, from the Bodleian Library at Oxford, where they have been found committing much injury amongst the Oriental manuscripts. They are the larvae of two, if not three, distinct species of *Anobium*, small Beetles, known in the perfect state under the name of the Death Watch.

Mr. G. R. Waterhouse read a series of notes on the synonymy and distinctions of the British species of *Heterocerus*, a genus of small Beetles which reside in the damp earth at the edges of pools of water.

NOTES FROM GUERNSEY.

I AM much delighted with the accounts of your visits to the nurseries. Will you be so kind as to inform me if you meet with *Ruscus androgynus*—a very free-growing climber, with dark-green, glossy leaves? I think it would almost flourish in a cellar.—[*Ruscus androgynus* is pictured in the "Botanical Magazine," t. 1898, with small yellow flowers issuing from the margins of the leaves. We do not remember to have seen it in any nurseryman's catalogue.]

I daresay that *Samolus litoralis* is well known to you. It flowers so freely here, and so long, as to suggest that it might be desirable for some of your decorative arrangements.—[Very likely; but we never saw it tried, or on sale.]

Pray is *Crinum Forbesi* to be procured in England?—[It has never been introduced.] You have given it a most tempting description in THE COTTAGE GARDENER for 1853.

When sending to Mr. Salter, a short time since, I enclosed a few bulbs of a *Lachenalia* for you. I dug them from the open border, as our potted plants were so nearly over. Will you kindly name it for me, and just say if there can be a more charming bulb for winter?—[This is *quadricolor*, a most charming thing; many thanks for it.] With the *Lachenalia*, I sent a clump of the tiny *Ophioglossum Lusitanicum*. I thought it might do for some of your fair friends.—[This, the smallest of the race of Ferns, was growing in the best yellow fibry loam.] It is surprising the amount of drought this little Fern will endure. I have lately commenced watering a pot of it which had been lying on one side for nine months. The plants are just up, and look well. Pray observe the soil in which it grows; for you may be surprised, when I inform you, that *Erica cinerea* flourishes in it. I expect you will find a few bulbs of *Trichonema Columna* and *Scilla autumnalis* in it. I thought you would be pleased to accept them through your fondness for bulbs.

In addition to these little matters, I sent a few pieces of *Viburnum tinus lucidum*, a splendid shrub, far surpassing the old *Laurustinus*, and flowering some months later. I forget if it is common in England. It ought to be.—[Yes, but it is not so good as the common *Laurustinus*.]

The name of the Daphne will much oblige.—[*Daphne oleoides*.] The *Chenopodium*, I think, is *C. Bonus Henricus*.—[Yes.] It was brought from the Pyrenees by a poor consumptive patient, who prides himself much on its introduction. He recommends it for eating as Spinach, for salads, and, above all, for soups. These Guernseymen have so much French in them, they must have soups—*Soupe a la Graisse*, Conger Soup, &c.

One more inquiry—the last and most important. How am I to dispose of the Seedling Apple so well received by the Pomological Society, after flattering notices by the Editors of THE COTTAGE GARDENER, &c.? I have 100, or 150, scions of it, and a few young trees. I would give them away, were it not for some bad luck of late making it desirable to realise by it?—[Offer it to Mr. Rivers, or some well-known fruit grower near London. They always give a fair value for any good saleable kind of fruit.]—W. G., Guernsey.

BEES SECRETING WAX.

BEGGING Mr. Wighton's pardon, I must take leave to say that his mode of "polishing off" debatable questions in natural history, is anything but scientific. Certainly a more unsatisfactory way of settling a controversy, involving nice questions, concerning the mode in which bees carry on their labour, whether of construction or of repair (always so difficult to be observed), I never met with. Who, I ask, could be satisfied with such (I must call them) bare assumptions? A naturalist would ask for *proofs*, and proofs resulting from oft and patiently-repeated experiments,

or carefully-verified *observations*. But Mr. Wighton is content to tell us in an off-hand manner, that such mysteries are "very easily explained;" and when we look for the explanation, we find nothing, absolutely nothing, in the shape of *evidence*. Only echo blandly repeats, "*very easily explained.*"

We all knew,—in the infancy of our bee-knowledge,—that "in strong hives there is always, among the broken remains which sealed up the stores, an ample supply of wax for slight repairs;" although it still remains to be proved that bees make use of the "broken remains." And it requires no great effort of thought to suggest that possibly "even the seals of wax may (!) be taken off the mouth of the cells," for the same purpose. But we should have called this "conjecture," not assumed it as a *fact explanatory* of a "mystery." Be this, however, as it may, Mr. Wighton has not even attempted to explain how the "number of new pieces of comb had been constructed (in the middle of winter, as detailed by a 'DEVONSHIRE BEE-KEEPER,') whose *virgin purity* contrasted strongly with the *blackened* appearance of the more ancient ones." This is something more than a "slight repair."

Again, Mr. Wighton says, "As I mentioned before, and now repeat, *without the least fear of contradiction* (!), bees eject wax from their mouths like small frothen crumbs of bread, and not in pellucid scales, &c." This, also, may possibly be true: but, while we are by no means disposed to contradict this very positive statement, neither are we in the least degree shaken in our old belief from ocular demonstration, and from the detailed experiments of others, that bees *do secrete* wax between the rings of their abdomen, and do *not collect* it from plants or other extraneous sources. I must add, in conclusion, that it was not by such writing, blind as he was, that old Huber carried with him the (I think I am right in saying) universal world of intelligent apiarians of his day, as well as most apiarians of succeeding times, down to our own age.—B. AND W.

P.S.—As soon as I had posted my last communication on this subject, I regretted that I had used the word "scrape," as applied to the action of the bee's mouth on the Laurel leaf. My actual knowledge warrants my asserting no more than that they obtain something of a gummy or glutinous, or, perhaps, I should say, *sticky* nature therefrom. In a few weeks, if the present mild weather continue, we shall be able to examine the young leaves of the Laurel, and determine for ourselves what it is the bees haunt them for.

CHILDREN IN GARDENS.

GREAT dislike to children being in gardens is often shown by gardeners, and many leave their places through quarrels about them. Children are misunderstood by many, and are expected to have the staid ways of grown-up people. This expectation is unreasonable. For myself, I treat a child as I would a shoot of a tree—guide it without pinching.

I have lived in three places where there were young children. In one of these places they were very rude, and looked upon all like me as inferior beings. Their parents were rude, egotistical, rich-only-in-money persons. I stayed but a short time, otherwise I should soon have controlled the children. At the other two places I did very well, and could keep the little ones from giving much trouble or annoyance.

I have three children at my present place, rough and full of life; and I have kept a diary, for the last twelve months, of the time I have lost on their account, or rather the time it has taken to remedy any mischief they have done, or mend, or make, anything for them. The time spent has been thirteen hours and a half.

In dealing with children, I make it a point to get them under an obligation to me. Any little job they want doing, I generally keep until something else turns up. This serves as a pretext; and I tell them, if they interrupt me, I cannot do for them what they wish. They often want to help me when I tell them so, in order that I may get done sooner to do their little jobs. This is the most trying time I find with them. It is not often I put them off; if I am potting small things, I allow them to carry the pots to, or from, some place; to break crocks, or do any little job I find them that is required. Outside, I let them dig on vacant land, and each to have a garden about two yards long and one wide, to which I turn them, by giving a pinch of some kind of seed. In fact, I keep them constantly employed. They will chase butterflies, in summer, without running over beds, borders,

&c. The son will sit an hour at a time, with a long string and sieve, expecting to catch sparrows.

The time I spent on their account, was for the following purposes:—Building a grotto of shells they had collected at the seaside, three hours; making two cross-bows, half an hour; putting paddles, helms, &c., to boats, ships, and other water craft, two hours; blowing up footballs twice, forty minutes. The rest of the time passed in numerous little jobs.

This may seem childish to some of our aristocratic gardeners, but I can assure them it answers a good purpose with me. I love children; and knowing that it is their nature to have occupation, I endeavour to find it for them. I could enumerate a hundred little jobs any gardener could set them, with benefit to himself, and pleasure to them.

The prattle of a child is music to me, though it will sometimes ask some posing question. I make it a point never to tell it a falsehood, though I often evade its queries by turning its attention to another point. The man who cannot bear children has my pity, for he knows not the pleasure that lies at his door.—JOHN HAGUE, Ashton-under-Lyne.

EARLINESS OF THE SEASON.—On the 8th of the present month we saw more than twenty heads of Asparagus, fit for cutting, on open beds sloping to the south, at Winchester, and entirely unforced. The first heads seen on the same beds in 1858, were on the 8th of April; and, in 1857, on the 5th of April.

TRADE LISTS RECEIVED.

Sutton's Farm Seed List for 1859, compiled by Sutton and Sons, Reading, is a quarto pamphlet of twenty pages, containing not only an enumeration, but a description of all the agricultural seeds sold at their establishment. It is interspersed with many useful hints, and contains a great deal of information.

A Select List of Roses, Fruit, and Forest Trees; Ornamental Trees and Shrubs, &c., by Richard Bradley and Son, Halam Nursery, Southwell, Notts.—This is a respectable catalogue of general nursery stock, selected with much judgment.

TO CORRESPONDENTS.

PASSIFLORA PRINCIPIS (*A Constant Subscriber*).—This is a trade name for *P. racemosa*. The cause of its not flowering is want of warmth. It requires a stove; and unless your greenhouse is very warm it will not succeed. Cut it down to within three inches of the soil, and keep it warmer. Do not cut your common Passion-flower down again, unless very weak. There is no weekly publication devoted to the subject you mention.

DAPHNES AS BEE-FLOWERS—TRANSFERRING BEES (*Amo*).—Your question, "Whether pink and white Daphnes will hurt bees," is somewhat indefinite. Our general reply to such inquiries would be, that these little creatures, in this country, with free liberty to roam at large, have enough of instinct—or call it intelligence if you will—to seek from an abundant and a varying efflorescence the pabulum best adapted to their nature; and we may safely leave them to follow their own sagacity in the avoidance of whatever is prejudicial, or unsuitable, to their wants. Your other question, "How you can transfer bees from common hives to wooden hives," has often been asked by former correspondents. Our advice has always been to stock a new hive of any kind, in the natural way, by a good early swarm in the season. A very experienced hand might now and then make a tolerably successful transfer of bees and combs together, but no other ought to attempt what would probably end in a sorry mess; or, at best, might ill require the trouble and risk.

LAWTON BLACKBERRY (*B. Catton*).—The Lawton Blackberry is of American origin, and was found wild near New Rochelle, in the State of New York, and hence it is also called *New Rochelle Blackberry*. It is a kind of Bramble, producing large, oval, black fruit, which is said to be well flavoured; but we have had no experience of it.

TANK HARDENING WATER—IMPROVING WHITEWASH.—"A brick tank, lined with cement, made two years since, causes rain water to become very hard. Is there any cure for this?—Is there not some preparation of lime and tallow for giving to the whitewash, applied to the outside of walls, a more lasting character than the ordinary solution of lime and water?"—*A COUNTRY SUBSCRIBER.*

[We shall be obliged by answers to these queries.]

PEARS—FUMIGATING BLOOMING TREES (*W. C.*).—You do not state the locality and the soil where these Pears are growing. They are both first-rate sorts, but may not suit the situation in which you have them. It does not matter how they are grafted; but we would recommend you *Knight's Monarch*, in preference to *Crasanne*. Our contemporary's "if properly managed," is a saving clause. We have no doubt that the fumigation might be so conducted as not to be injurious to the blossoms of trees; but, in the majority of instances, it would be destructive.

POLYGALA DALMATIANA (*A Greenhorn*).—This plant, a British hybrid, generally blooms naturally in a greenhouse from February to April. We have no observation or experience on the subject; but were we to want it

to bloom in August, we would prune back its shoots when it began to show flower-buds—say in March, encourage to make fresh growth, and give it a check by plenty of light and less water in June and the beginning of July, giving more water again to swell the flower-buds, which we should expect to be thus formed. If once got to bloom at that period, it would be easier afterwards.

HEATING A STOVE FOR FERNS (W. W. B.).—You do not say the height of your house (twenty-five feet long, by twelve feet wide), or whether the sides have much or any glass, or if the walls are all exposed, or partly sunk beneath the level. If at all lofty, all exposed, and much side glass, your two four-inch pipes all round will scarcely suffice. If half of your side walls are sunk below the ground level, and you have little or no side glass, your heating power will be ample.

CALATHEA ZEBRINA (*Calceolus*).—This blooms frequently; but there is nothing very enticing about it, except, perhaps, in a botanical point of view, for noticing the difference between the position of the stamens and pistils in *Maranta*, and Gingeworts—such as *Caunias*. The plant is chiefly valued for its fine, shaded foliage, which, in a high temperature, and a medium degree of shade from sunshine, is truly beautiful. It is best known as *Maranta zebra*.

DISEASED VINE LEAVES (W. W.—, Lower Tooting).—As far as we could make out from the very small leaf enclosed, it is infected with mildew, and you have done quite right in dusting the leaves with flowers of sulphur. Do not syringe them. Paint the stems of the Vine, and the sides of the flue, or hot-water pipes, with the sulphur mixture we have so often particularised. The leaf, however, tells another tale, intimating that the roots are deep in cold, clayey, poor soil. They ought to be brought nearer the surface. At present you can do no more than remove the soil until you come down to them, and replace it with a light rich compost. Give liquid manure once a-week.

VARIOUS (Amy Flower).—We suspect the *Passion-flower* has too much root room, and has been allowed to grow freely without pruning. The roots might be the better for being pruned; but, on the whole, we think want of proper pruning the shoots may be the chief cause. Even now we would prune back most of the last year's shoots to within two or three buds, or joints, of their base. These will push and grow vigorously, and if the wood were at all well-ripened last autumn, will bloom profusely on the young shoots of the present summer. If they should not bloom, give all the sun possible, lessen water, and shorten the points of these shoots in autumn, and then, when you cut back in winter, or spring, the shoots of the following summer will be sure to bloom. The *Acacia* should be exposed to all the sun possible; and, if planted out, little water given after October until spring. We are not sure of the specimen. We are not sure of No. 3, from a leaf, but suppose it to be a *Banksia*, or something of that kind; and if so, it had better be kept in a cool greenhouse, merely secure from frost, from October to May. Your *Camellias* may have been injured from over-watering; though, when the drainage is good, that is not very easy when flowering, unless the plants are in rather large pots, containing earth in which the roots have not yet worked. We should almost be inclined to believe that the roots had got too much cooled before housing. If the soil is wet, and the night temperature low, a great degree of cold is experienced in the soil of a porous pot. On this account, it is often better not to take such plants out of the house at all, especially in the case of beginners. If you want your *Banksian Roses* to occupy a large space, on a wall, we would advise cutting them down to within a foot of the ground, and selecting the shoots next season. They will do admirably, planted out, or in a large pot; but if out of doors, in Lancashire, the place must be sheltered. If you mean them for your conservatory, and to bloom from the roof, then we would advise training the shoot as high as desirable. Remove all the buds below the height at which you wish flowering-shoots to come. Let all the buds above break into shoots; thin these out, so that those left to dangle, will be freely exposed to light. If very strong, these long, well-ripened shoots will be covered with short shoots, covered with bloom next spring, or the following one. Secure long, well-ripened shoots every year, and you will have pendant wreaths of bloom. On this system, the flowering-shoots are cut out when the flowering is over, and strength given to their successors. The Sweet Daphnes are propagated by cuttings and graftings, as *Daphne laureola*, *Pontica*, &c.

SORGHUM SACCHARATUM (C. E. B.).—This, the Chinese Sugar Cane, called, also, *Holcus saccharatus*, is an excellent food for cows. Sown at the end of May, the plants will up in a week, and three crops cut during the summer and autumn. The soil should be in good tilth, and moist rather than dry. Guano and superphosphate of lime, are good manures for it. Eight or nine pounds of seed per acre are sufficient. It is too coarse, we should think, to make into hay. It is very fattening and much relished by pigs, as well as by horses, and all horned cattle.

with regard to soap; that was a mistake, and they would explain why. The Spitalfields weavers could not sufficiently praise the statesmanship displayed in everything but the change as regarded silk. The men of Coventry had always been advocates for progress and reform; they hailed the measure of the Right Hon. Baronet with joy; but would suggest that he was mistaken as regarded ribbons. Birmingham was so delighted with the change, she would forgive the Premier his currency ideas; she would give him her most strenuous support in all but those points that regarded hardware and metals: he was altogether wrong there.

Sydney Smith cheered Lord John's reforms till he talked of touching the prebendal stalls. The prebend could not submit to that. Many years ago, Cochin cocks had their tails trimmed. Then Polands, with white topknots, had the inevitable black feathers in front skilfully shaved off. Then Game fowls had their legs dyed. They were detected by the Judges; and all applauded, except, first, the Cochin exhibitors, then the Polands, and then the Game. You recollect the triangular duel in Captain Marryatt's novel. Well, so it was with exhibitors. The Polands said it was too bad of the Cochins. The Game said it served the Polands right to be disqualified. And the Cochins were glad the Game were exposed. And the Spanish stood by and said "Naughty human nature!" And then, when these peccant classes had abandoned their wicked ways, the Spanish were detected trimming. Now, none of the classes were ever made up of prepared birds; but there were some in each. The exposure was great, and so was the indignation.

Some years ago, a man submitted very tamely to an insult, and said it was unnecessary he should give any proof of his courage, as he belonged to the militia—proof in itself! So some said they could not be accused of trimming, because they had always set their faces against anything of the sort; but they admitted they had removed a few feathers, or rather hairs, from their fowls' faces. Others openly said they had merely developed those beauties that bungling Nature allowed to be concealed. Some had done it because others did. All were, however, agreed on one point. "If," said the solicitor to his barrister, "you find the evidence weak, abuse the plaintiff." So all decided on one thing,—viz., to abuse the Judges! Poor men! Their task is something like the drummer flogging the soldier. "Don't hit just on my bladebones," and the boy hit lower. "Not there," said the soldier, and the boy hit him in the middle. "That's worse than all." "Drat you," said the drummer, "there's no pleasing you," and he threw down the cat in despair. After all, are they not public property? Do not their awards belong to the public? No one denies it. You need not be afraid of their giving up the office; therefore, rate them soundly. It is too good a thing to be easily given up. Only fancy, a nice three-days' holiday; getting clean away from the monotony and duties of home; spending two cool winter days in seeing the country through a railway carriage window. The luxury of early rising, and breakfasting by candle light the next morning. The importance felt at being lord of the Show all the day, and awarding all the prizes. The consciousness of having done a hard day's work—probably nine or ten hours on foot; and then, when they return, to find, after paying expenses, they have at least thirty shillings over and above the pleasure. They cannot expect to earn all this without some responsibility, and without being found fault with; therefore, forget your own peccadilloes of trimming, &c., and abuse the Judges.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

MARCH 15th, 16th, and 17th. SHROPSHIRE. Sec., T. W. Jones, Church Street, Wellington, Salop.

MAY 25th and 26th. BEVERLEY. Sec., Francis Calvert, Surgeon, &c.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Pitman, Esq.

JUNE 6th, 7th, and 8th, 1859. GLASGOW. Sec., Robert M'Cowan, 17, Gordon Street, Glasgow.

JULY 1st, 2nd, 4th, and 5th. SHEFFIELD. Wilson Overend, Chairman. Entries close the 15th of June.

N.B.—Secretaries will oblige us by sending early copies of their lists.

ABUSE THE JUDGES.

"Naughty human nature!"—Pecksniff.

WHEN Sir Robert Peel introduced his celebrated tariff, that eminent statesman was harassed with deputations. The soap-boilers begged to express their admiration of all but the alteration

THE HOUSE OR GROUND TUMBLER PIGEON.

THROUGH the kindness of Mr. Paton, I have become possessed of one of these very curious Pigeons; and, as a description of it may interest your Pigeon-fancying readers, I forward the following:

I have procured for her a yellow-bearded cock Tumbler of the London flying variety. He weighs $12\frac{1}{2}$ ozs., and measures one inch from the outer edge of the pupil of the eye to the end of the beak.

The hen House Tumbler weighs $10\frac{3}{4}$ ozs., and measures in face an inch all but one-sixteenth. She is in colour a yellow, with white flights; tail white, with one or two foul feathers; a few small white feathers about the beak. Her head is rather angular, and her eye a beautifully clear pearly white.

I have remarked it as curious, that in all the numerous varieties of Tumbler Pigeons I have met with, there is a tendency, in some individuals of each variety, to the bearded marking; and I have not noticed this marking in any other kind.

As to her performance, she cannot fly, for the attempt to spring up causes her to throw a summersault. Even should she, when let out from her pen, stretch her wings (as Pigeons often do dancing), rise a foot or eighteen inches from the ground, over she goes; if raised slightly by hand, or frightened so as to cause her to attempt to fly, she will tumble as often as it is repeated. Her feet are unfeathered.

Mr. Paton has also sent me one of his Air Tumblers, which, he expressed his opinion, would tumble forty times in a minute. Not having flown her as yet, I am unable to report on her prowess. I have paired her with, a middling, red-agate, short-faced Tumbler cock. He weighs $10\frac{1}{2}$ ozs.; and measures in face six-eighths of an inch.

The Air Tumbler hen is small, only weighing 9 ozs.; but measures in face a full inch. Her eye is beautifully clear pearly white; her feet unfeathered; her forehead is low, giving her a very mousy look; and her colour is a red agate—that is, white, irregularly mottled with red. In flying in the loft, I have seen her at three different times, in flying to an upper beam, throw a quick, clear summersault, and instantly drop on the floor, apparently losing command of herself; which, I fear, does not augur well for her performance when she is to be let out.

Such is the best description I can give of these two interesting Scotch breeds of Tumblers; but, it will be remembered, it only refers to these two individuals.—B. P. BRENT.

THE BRAHMA CONTROVERSY.

I DID NOT intend to have written anything more on the above-mentioned subject, but your correspondent "SALOP," charges those who differ from him in opinion, on this question, with "animosity" to the Brahmans. I certainly must disclaim any such feeling towards them, as I believe they are a valuable variety of poultry; but I still think, after further examination of different specimens since I last wrote, that they are cross-bred birds. It is disclaimed that they ever produce a fifth toe any other colour than the different shades of grey, or a rose comb. But do not pea-combed Brahmans sometimes throw single-combed ones? The only pair of imported birds I saw, had single combs. Whence, then, come the pea combs? and others like enlarged Malay combs? The only other variety that do not produce their like, invariably, in the comb, are Dorkings, and they are acknowledged to be the result of a cross. It is said by the Brahma defenders, that a cross throws back to one of the originals. Can anyone inform me whether mulattos ever produce offspring which are perfectly white, or perfectly black?—ALPHA.

PIGEONS.

POINTS OF THE VARIETIES IN ACCORDANCE WITH THE PROPOSED PRIZE LISTS.

(Continued from page 288.)

Second Division. Fancy Pigeons generally (fifteen kinds).

I. THE FANTAIL.—The five points are:—1st, carriage; 2nd, number of feathers in the tail; 3rd, neck long and slender; 4th, trembling; 5th, plumage: no appendages. Four classes for varieties:—1st, White; 2nd, Black; 3rd, Blue; 4th, any other colour.

II. THE JACOBIN.—The five points are:—1st, the hood; 2nd, the chain; 3rd, the eye; 4th, shape; 5th, plumage. Four classes for varieties:—1st, Black Baldheaded; 2nd, Red Baldheaded; 3rd, Yellow Baldheaded; 4th, White, or any other colour.

Shape may include short beak, small size, and long pinions. Heavily-feathered feet are not objectionable.

III. THE TRUMPETER.—The five points are:—1st, the purl or moustache; 2nd, the eye; 3rd, the hood; 4th, the slippers; 5th, plumage. Three classes for the varieties (or they may be increased, if found necessary):—1st, White; 2nd, Black Mottled; 3rd, any other colour.

The voice is, perhaps, the most valuable point of all; but I do not see how it is to be satisfactorily judged in the show pen.

IV. THE LAUGHER.—A class should be given to this breed; and, when better known, the points may be laid down, which I am not able to do, only knowing them by their very peculiar voice.

V.—THE BABE.—The five points are:—1st, the eye; 2nd, the head; 3rd, the beak; 4th, shape; 5th, plumage. Four,

classes for the varieties:—1st, Black; 2nd, White; 3rd, Dun; 4th, any other colour.

In shape, I consider a slender neck and long pinion as good qualities; but I should regard a hood, or frill, objectionable in Black, White, or Dun.

VI. THE TURBIT.—The five points are:—1st, the occipital ridge; 2nd, the gullet or dewlap; 3rd, the frill; 4th, shape; 5th, plumage. Four classes for the varieties:—1st, Blue-shouldered; 2nd, Red-shouldered; 3rd, Yellow-shouldered; 4th, with any other coloured shoulders.

I regard the appendage of a hood, or point, rather objectionable than otherwise.

Dark tails in Blue, Silver, Chequered, Black, or Dun-shouldered, are not objectionable. The Turbit is a very pretty variety of Pigeon, small, neat, and very round in shape.

VII. THE OWL.—The five points are:—1st, the hooked beak; 2nd, the eye; 3rd, the gullet; 4th, the rose-breast; 5th, plumage. Four classes for the varieties:—1st, Blue; 2nd, Silver; 3rd, any other whole colour; 4th, for the subvariety called Meeves.

The hooked beak and bolting-eyed wild look, are marked features of the Owl.

The name Meeves seems to be a corruption of the German word *Meve*, or *Gull*. The Turbit derives its German name of *Mevechen*, or *Mövechen*, from a fancied resemblance to the Kittiwake, *Larus rissa*, and this *Meve*, to the Black-headed Gull (*Larus ridibundus*), they probably owe their origin to a cross between a White Owl and a Helmeted Tumbler. Their form is between that of the Owl and the Tumbler. Plumage, white; the top of the head and tail being coloured, and they have a frill on the breast. They have been recently introduced, and I am not aware that their points have been worked up to a standard.

VIII. THE MAHOMET.—The points are:—Black wattle and cere; sooty skin and down; seam on the breast; soft silver colour. No harm in offering a class, but I fear the bird is extinct.

X. THE FRILLBACK.—The points are:—1st, the mantle, best, deepest, and most evenly goffered; 2nd, the rest of the plumage best crimped or curled; 3rd, best and largest hood; (4th, eye?); 5th, colour. One class is sufficient at present.

Feathered feet I regard as no objection.

X. LACE, or Silky.—The point is:—The best and most complete separation of the fibres, or filaments, of the feathers in the whole plumage. One class.

I am not sure, but I think the Fantail is the real form of this sort.—B. P. BRENT.

(To be continued.)

OUR LETTER BOX.

THE PRIZES AT DEVIZES AND CREWE.—“Can you, or any of your readers, inform me why the prizes awarded at the Devizes Poultry Show have not been paid? I think it high time something was done in it. The same question I ask of the Crewe Show; the prizes of which have not yet made their appearance.”—G. R.

ADDLED EGGS (T. T.).—Our correspondent says, “All the eggs (ducks' and hens') which I have set this spring have proved addled.” Keeping them in bran, until you had a sufficient number, could not have been the cause; for we have always done the same without any such result. We think your nests must have been badly made, and in a place exposed to cold draughts. Straw *uncut* is the worst of materials: if cut into inch-lengths it is one of the best. You call the present season “spring,” but it is yet winter; and the nests should be prepared and sheltered accordingly. Plenty of cut straw on the ground, surrounded by close sides, and, *above all*, only a few eggs in each nest. We put nine under a large hen, and seven under a small hen. Some persons never put more than five or six at this season.

WHITE FEATHERS IN SPANISH.—“I have a good black Spanish hen with a white feather in the wing, and a feather or two in the tail tipped with white. Will these white feathers disqualify her, or a pen in which she might be?”—A CONSTANT SUBSCRIBER.

[The white feather in the wing and the white-tipped feathers in the tail of a Spanish hen would disqualify her, and, consequently, the pen in which she was. It is, however, common to many of our best strains, and general among chickens. She will, very likely, lose them in moulting.]

LONDON MARKETS.—MARCH 14.

POULTRY.

We have an average trade, and a moderate supply. Aylesbury ducklings are scarcer than they have been of late years.

	Each.		Each.
Large Fowls	5s. 0d. to 6s. 0d.	Goslings	6s. 0d. to 7s. 6d.
Small ditto.....	4 0 " 4 6	Ducklings	4 6 " 6 6
Chickens	2 9 " 3 6	Rabbits	1 5 " 1 6
Turkeys	5 0 " 10 0	Wild ditto	0 9 " 0 10
Guinea Fowls ..	2 6 " 3 3	Pigeons	0 9 " 0 10

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	MARCH 22-28, 1859.	WEATHER NEAR LONDON IN 1858.					Sun Rises.	Sun Sets.	Moon R.A. & S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.							
22	Tu	Epacris impressa.	30.535-30.507	57-27	E.	-	1 af 6	13 af 6	34 11	18	7 7	81	
23	W	Selago distans.	30.507-30.257	63-30	S.W.	-	59 5	15 6	morn	19	6 48	82	
24	Th	Polygala ligularis.	30.225-30.061	69-86	W.	-	57 5	17 6	50 0	20	6 30	83	
25	F	LADY DAY.	30.241-30.098	53-22	N.E.	-	54 5	18 6	54 1	21	6 12	84	
26	S	Cytisus filipes.	30.242-30.136	57-24	W.	-	52 5	20 6	46 2	22	5 53	85	
27	SUN	3 SUNDAY IN LENT.	30.147-30.148	56-33	N.	-	50 5	22 6	24 3	23	5 35	86	
28	M	Acacia biflora.	30.146-30.050	54-28	W.	-	47 5	23 6	52 3	24	5 16	87	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-two years, the average highest and lowest temperatures of these days are 51.1° and 21.7°, respectively. The greatest heat, 75°, occurred on the 27th, in 1830; and the lowest cold, 14°, on the 25th, in 1849. During the period 133 days were fine, and on 86 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

ASPARAGUS.—The spring dressing, if not yet done, should no longer be delayed, as the shoots will soon begin to grow.

CARDOONS.—Sow a few pans, where this vegetable is esteemed.

CAULIFLOWERS.—Plant out some of the early sowing, as soon as they are of sufficient size, to succeed the autumn sowing. Draw earth to the stems of the early-planted, to prevent the wind from blowing them about to loosen them.

CELERY.—When it is beginning to run to seed, take it up, and lay it in by the heels in any out-of-the-way corner, as it may still be useful for seasoning, although no longer fit for salad.

CUCUMBERS.—When the heat declines, fork up and renew, or add to the linings. Lay some fresh soil in the frame, to get warm, to be ready to cover the young roots when they appear on the sides of the hills. Shading is sometimes necessary when a few dull days are succeeded by bright sunshine.

MELONS.—Pot off the plants singly when the seed-leaves are fully expanded. When the bed, in pit or frame, is ready, it is advisable to plant them out when young and small; they do not then receive such a check as when they are large.

POTATOES.—Get in the main crops where the ground is in good working order.

SPINACH, NEW ZEALAND.—Sow a few pans in heat; to be grown in heat till put out under hand-lights towards the end of April. Sow a few rows of the *Round-leaved* for a succession.

TOMATOES.—Pot them off as soon as they are fit to handle, and encourage them, by attention, to grow to a good size by the time the weather will permit of their being turned out; for, if very small at that time, they seldom ripen their fruit well before the frost sets in.

FRUIT GARDEN.

FIGS.—Prune and nail.

FRUIT TREES.—Since our last communication, we have had some sharp frost, which, I fear, has injured the blossoms of Apricots and Peaches. Those who have taken our advice to protect the bloom will not now regret such labour.

GRAFTS.—Look over them frequently to see if the clay keeps close about them, as it is apt to crack, and sometimes to fall off. Fill up the cracks; and, if very defective, take the old clay off, and add some new in its stead. Remove all the shoots that appear below the graft; for, if permitted to remain, they rob the graft of nourishment, and prevent it shooting freely. The trees which were grafted last year should now have their shoots shortened, to produce sufficient branches to form a regular head near the stock.

FLOWER GARDEN.

AURICULAS.—Keep them as near to the glass as possible, and give an abundance of air in mild weather by draw-

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ing the lights quite off the frames. Shade during strong sunshine; and when water is necessary, be sure to give each plant a sufficient quantity to moisten the soil through, as they are apt to get cramped in the bloom if water, sufficient to soak to the bottom of the soil, is not given. Take the offsets from them.

BEDDING-OUT PLANTS.—Push on the propagation, and get the young plants potted and hardened off as fast as practicable.

DAHLIAS.—Continue to put in cuttings of any choice varieties of which it is desirable to have a good stock.

FUCHSIAS.—Thin the stems of those that have been left in the open ground during the winter.

IVY.—To produce a close, green carpet of foliage, on buildings and other places to which it clings, it is now advisable to clip off the old leaves with a pair of hand-shears, and it will again speedily be covered with fresh and vigorous leaves.

LAWNS.—Commence mowing, and regularly roll and sweep both them and the walks.

RANUNCULUSES.—Water the beds occasionally in dry weather. Sow seeds in shallow pans, or boxes; cover the seed as lightly as possible, and place them in a cold frame.

ROSES.—Propagate by cuttings, layers, and grafts. Prune the out-door varieties. All the old wood should be cut away, leaving the young shoots at regular distances, which should be shortened to such lengths as to form the head into a handsome shape.

SHRUBS.—Large evergreens, that have lately been transplanted and mulched, will require attention in watering.

TIGRIDIA PAVONIA.—Plant; it makes a splendid bed. It will grow in common soil, but thrives best in peat.

VIOLETS.—Make new plantations of *Russian*, *Double Blue*, and *Double White*. Select the best young runners; but if seedlings can be had, they make stronger plants, and flower more abundantly.

WILLIAM KEANE.

VAUXHALL NURSERY.

MESSRS. MILNE, ARNOTT, AND CO.

(Continued from page 361.)

NOTHING is more to the point than to strike while the iron is hot, unless it be to finish one thing before you begin another. These nursery reports are getting more and more strength every season. The Flower Shows are all so common about London, that, with the exception of a new plant now and then, one learns nothing at any one of them. The same plants, the same flowers, the same prizes, the same faces, the same fashions, and the horrid noises of military bands, in lieu of the martial strains of

"The days when we went gipsying,
A long time ago,"

are enough to put down the best spirits, and to keep them down. The Horticultural Society, and the glories of Chiswick, are on their beam ends, being the first striking failure; arising, and going down, from the self-same dead weight of sameness, and bad system of never changing their tunes. The very reverse of all this is seen in all the best nurseries, where men get rich by the fairest of all

means, in the face of an eager competition, by dint of steady perseverance and good management; and whether it is in the execution of their plans, or in the economy of the execution, or in their varied stocks-in-trade, and their different ways of raising them and showing them off, or in the fact that some of the best heads and hands in the craft are met with there, and that a larger portion of the public opinion on gardening is just taken in, and then retailed out of, the nurseries at prime cost—I say, whether it be so or not, there is no question that the best and wisest among us will find something to learn in any one nursery about London. Therefore, the London nurseries and their ways have always been a source of the greatest interest to country readers in my time. Loudon's calls at the Vauxhall, and other nurseries, often made my mouth water before I left off deer-stalking in the Highlands, or thought about it. But my reports go over more ground, which imposes a greater responsibility than could happen in Loudon's early reporting days.

The most curious thing about Camellias is this, that no nurseryman, or amateur, has yet attempted to give them in sections of good, better, and best. Which are the best score, or the second-best three dozen, or the third-best fifty Camellias, are questions as plain as D. Beaton to men like the Messrs. Milne, Arnott, and Co., but are as "all Greek" to ninety-nine out of a hundred of all gardening people besides. I knew the best sorts in every section of the family. Twenty years back I had charge of one of the largest private collections of them then in England; but, just at that time, the seedlings of other breeders began to pour in from the continent, and from America, and I went a flower-gardening, and lost the chance of selections of Camellias—a loss which I felt deeply for the last few years, and which loss no author, or contributor, seemed altogether to supply. I cannot supply it myself to-day; but I shall make a beginning; and if I live long enough, the next generation will benefit by the research.

Lest I should forget it at the end of the tale, let me explain the difference of *Chandler's elegans*, which is all blotched, while the *Elegans* published in "Chandler and Booth's Illustrations, &c." of the Camellias, is the same plain one that is in common use. It is not said, in that splendid work, whether *elegans* is a cross-bred plant, only that it was a seedling from the *Waratah*, which partook of the habit between the *Waratah* and *Peoniaeflora*. It was extensively propagated before it came of age; and all the plants from that propagation retain the stamp of the original, and are perfectly plain, to this day. When the same plant came of age, it turned blotched with white in the flowers; and the plants from that state of *Elegans* retain the variegation, unless they get too highly fed, or too much room at the roots. In the choicest selection of kinds, both states of *Elegans*—the plain rose-coloured *Elegans*, and the large, variegated *Elegans*—should be included. They have the largest flowers of all the kinds of *Camellia Japonica* yet known to us. *Reticulata* is of a different blood from *Japonica*. But, as if it were to puzzle and confound the learned in such things, Nature took just the opposite turn with *Camellia Chandleri* (No. 16 in the "Illustrations"). Being assisted by the same hand, Nature gave another seedling from the *Waratah*, which was blotched from its birth till it came of age, then turned plain—that is, *Chandleri* from *Waratah*, crossed with the double-striped. And from this, one might presume that *Elegans*, by the same mother as *Chandleri*, had a dash of the blood of the double-striped, but not sufficient to give blotches, till assisted by age and its infirmities.

The best Camellias, at the time of the first Reform in 1832, were from China—the *Double-white*, *Fimbriata* (same as the *Double-white* fringed), *Imbriata*, *Incarnata*, alias *Lady Hume's Blush*, *Speciosa*, and *Variegata*. From English seedlings, chiefly raised in this nursery—*Chandleri*, *Carolina*, *Elegans*, *Eximia*, *Coccinea*, *Rosa Sinensis*, and *Woodsii*; also, perhaps, *Althaeiflora*; but very few

people had it true then, and still fewer have it now; *Peoniaeflora*, in one of its forms, having usurped that name. Every one of these is among the best at this day.

The best that I could make out at the Vauxhall Nursery the other day are the following; but there are a few more which did not happen to be open that day:—*Teutonia*, in the way of *Saccoi*, or *Saccoi nova*, one of the best rosy pink; *Duc de Bretagne*, a splendid deep rose, and new; *Reine des Fleurs*, a fine, imbricated, orange scarlet; *Archduchess Augusta*, a most beautiful new colour—a shade of purple over a deep-rose ground, as in some roses, with white tips to the petals; *Matholiana*, nearly as large as *Elegans*, dark-red, and the very best flower of that class; *Carlotti Grisi*, a fine, deep rose, with white tips, and imbricated; *Americana*, a blush-white Picotee; *Benney de Boul*, imbricated, red, flaked and tipped; *Traversi*, fine rosy crimson; *Marchioness of Exeter*, one of the largest size, and a bright rosy red; *Henri Favre*, like the last, a well-known sort; *Zevonia*, a very fine bright marbled crimson; *Papaveracea*, perfectly single, and in shape like the tree-Peony; *Insubria*, orange-scarlet, of a beautiful shape; *Albertus*, the best of the Carnation or Picotee kinds; *Duchesse d'Orleans*, *Landrechii*, *Beali*, *Alexina* (Low), all well known; *Jubilee* (Low), a beautiful black; *Magdalena*, scarlet, with white tips; *Emilio Campioni*, a most lovely light flower; *Magnifica rubra*, large red; *Vandesii rosea*, very large flower; *Fordii*, also large; *Saccoi*, one of the best-shaped Camellias, a bright rose; *Countess of Orkney*, a beautifully blotched flower; *Duchesse de Berry*, a blush with a purple tinge over it, a beautiful thing; *Jeffersonii*, splendid bright scarlet; *Formosa*, dark velvety red; *Puleskii*, a first-rate, light, blush, imbricated flower; *Dampieri*, scarlet; *Daviesii*, the truest and best scarlet colour; *De la Reine*, light blush; *Storii*, a lightish flower of great beauty; *Rosea perfecta nova* and *alba superba* explain themselves; *Targioni*, white-striped; *Valtereredo*, a most splendid rose; and *Dante*, a pure ivory white, with rose stripes in it.

Just put down all these names, from the old *Double-white* to *Dante*, alphabetically in your memorandum-book; for I booked them as we came to them, and I never took more pains with so few—but then, look at the hundreds to choose from! To make sure of my point I sent for the foreman, who has been in this nursery during the last thirty years, to ask him if such and such kinds were constant, or always so good as they then appeared. He was a most intelligent guide to me, and I regret I did not take his name. He mentioned several others; but, as they were not in bloom, I said I would rather call again. I have been in and out of London, like a bee in a bonnet, since 1851, without having the least idea of the extraordinary richness of the new Camellias; but there they are, and anyone may see them with this list in his hand. Some of the kinds must be sold out by this time; and some, equally good, which were not open then, will make up for them.

The next start was to see Chandler's scarlet Rhododendrons,—the only kinds, I was told, which bloom freely in pots, or set their bloom-buds in pots; and they seemed to do better that way than in the free beds. But see the difference between real practical men and those who would make believe, without understanding the thing themselves. In this very family we saw a fine, large, white seedling Rhododendron, in full bloom, in the open beds, next to a bed of *Atrovirens*, and some scarlet seedlings were ready to open. Instead of running down early spring-flowering Rhododendrons, and putting most stress on those of them which bloom after the frost is over, this firm have taken the practical-gardener view of that subject, and they are going to put all these early kinds into one class, and under one system, and then recommend them, instead of forced Rhododendrons. When you come to think of it, there is not the slightest reason why a Rhododendron should be forced at all in this country. There are plenty of all colours to bloom

from when you please, after the Chrysanthemums, till the frost is gone and forgotten, and there is no more room, or inclination, for stiving them in-doors at all. It is the best hit in London.

This nursery was celebrated for *Magnolia conspicua* ever since I can remember. The old stools are there now, as free and healthy, and as full of bloom, as *Tom Thumb* Geraniums. They must be in open bloom by this time, and continue so till May. They work them on the *Magnolia purpurea*; and I have a commission to hunt out a thousand of such stocks, ready to be worked on. The next thing we shall hear of will be this *Magnolia conspicua*, as white as a Water Lily, and not unlike one, for the front or back row of a ribbon border; the next, a scarlet row of *Cyclonia Japonica*; and to shade with it *Japonica carneæ*, the scarcest plant in England; then the blush Japonica—three kinds in shading, to imitate Scarlet and Nosegay Geraniums; and, to make up for Calceolarias, take *Forsythia viridissima*.

But what the next move will be, goodness knows sufficient for us to know our own next move, and that is for the best town plants; the Chinese Arbor Vitæ is one of them, and of which thousands are here to prove the fact, and ten thousand newly-struck cuttings of *Euonymus Japonica* and *variegata*. I never saw such lots of cuttings, except for bedding, and from that size to the balcony size. The place is full of them. No smell or smoke hurts them; and, better still, they can be sold by the acre. The demand for them is enormous.

Magnolia grandiflora seems also to be a town plant, as whole pits full of it are here in pots; and some nurseryman, from one part or other of London, is there every week asking to buy them by the hundred.

There is a kind of Privet here for town gardens, and for country ones too, which is little known out of the nurseries. It seems the best of all the Privet family, with thick oval leaves, short stocky growth; they call it *Ligustrum ovalifolium*, and say it was introduced by the Horticultural Society. It is an excellent thing, that might be made half-standard of, to imitate the broad-leaved Myrtle for terrace gardens. But the firm will, in time, get all these appropriate furnishing plants for their own terrace flower garden, to brighten it up in winter, and to let their customers see how dearly practical gardeners value these auxiliaries. Every hardy evergreen, from *Abies Clanbrasiliana* to the Portugal Laurel, which can be trained into standards, half-standards, or specimen plants, for the terrace and winter garden, are sure to be bought up as soon as they come into the market; and when the common Rosemary can be trained to any shape, and to look more like a new plant than an old customer, surely our art and industry will not leave a stone unturned that is at all likely to pay.

But let us get under glass again; say the show-house, which is a span-roofed one, about forty feet long, and ten feet wide, at a guess, with a walk three feet wide down the centre, and raised flat stages on each side of the way, and a door at each end. This is the first house of the kind that was erected in any British nursery, and the first of those with "no lights or rafters," like Mr. Rivers' orchard-house. It was put up in 1827, and is as good now as it was the first day. A perspective view and section of it are given by Loudon, in the "Gardeners' Magazine," vol. vii., 1831; and Mr. Buckingham, who was then in partnership here, thus describes it:—"The roof is without rafters; and, although much lighter in appearance than that of a house framed in the usual manner, is in reality much stronger, from the equal distribution of its strength to all parts alike. The timber, which is saved by not having rafters, more than supplies the increased consumption in the bars, which are three inches deep instead of two inches—the usual depth. The labour of framing the lights, making top and bottom rails, and also the weather-board at top, are all dispensed with. Hence the cost is less, and the appearance more

elegant." He also gives the whole of the details of building, fitting, and furnishing. That was the first edition of this useful kind of house; and the last edition is that in the Clapton Nursery, over Jones's cannon boilers, with which he has been thundering away as if the Russians were coming.

Every part of this house was equally gay with forced flowers; and the spaces between the pots were closely filled with smaller pots full of struck cuttings of bedding plants. I never saw anything, in that way, which looked half so good, besides the economy of the thing. The tops of all the cuttings were as evenly placed as a new-mown lawn, and as closely together as if they were all in one pan; the show-plants, being thick enough for effect, stood like what we gardeners call starers, or the surface of a varied green carpet, as it were. Beautifully bloomed Cyclamens, Fairy Roses, Epacries, Fuchsias (all in bloom), Cytisuses, Cinerarias, Dieleytras, Azaleas, Tulips, Hyacinths, Narcissuses, Lilies of the Valley, Correas, Heaths, China Primulas, Scarlet Geraniums (Mrs. Ricketts), Cherry Pies or Heliotropes, Mignonette, Violets, and Geraniums *Alba multiflora*, and *Crimson King* which was lately sent out by the Messrs. Wood and Ingram, to the great comfort of all forcing-of-flower-people, as it forces just as well as *Alba multiflora* in the dead of winter, which no other Geranium has ever yet done. Mrs. Ricketts is, perhaps, the best of the Scarlet Geraniums to force. It is of the breed of *Baron Hugel*, and with a much larger flower, and better white eye.

The bedding-out plants include every good thing that has been served up at our own table; and you must all own by this time, that, although we are very choice that way, we are never extravagant, or too old to learn; but we never change colour like the Doctor. But, with it all, is it not a cause of rejoicing to see a man like Dr. Lindley turned as completely round from the errors of his flower-garden notions, as if his face were between his shoulder-blades? Verily, the constant dropping of water will not more surely wear down the hardest marble than the force of truth; and so, too, the natural, and high-born, perceptions of the ladies of Queen Victoria's reign, in the matter of their own flower gardens, will wear down all obstacles, and obsolete notions, no matter how high or how low the banks and sand flats which may obstruct the tide for a while.

In one of the stoves, a lot of *Euphorbia splendens*, trained against the back wall just like young Peach trees, were in full bloom all the winter; and with double China Primroses, and sprigs of Ferns for nosegays, made a smart figure in the books of the treasurer. Here were all the fancy Begonias, and many new plants, new Boudardias, all the variegated Geraniums, double Petunias, *Tropaeolum elegans*, the Crystal Palace bedder, Dracenas, and a lavender-coloured *Datura*, called *meteloides*.

In the selling way, *Fayfugium grande* takes the lead after the Camellias; and there is a collection of a new race of crossed Achimenes, with Gloxinia, as is said, and with Gesnera, as they themselves affirm, which will be highly appreciated for their mixed colours and new style of growth. I saw some of them in bloom last autumn, and met Mr. Veitch there, to look at them. We both put them down as A-1.

D. BEATON.

FAILURES IN PEACH-HOUSES.

"Our Peach trees have bloomed well, but very few fruit have set. The bloom stood much longer than usual; but on examining it carefully on that account, we found the embryo fruit in the centre wanting. What could be the reason?"

It is difficult to assign a reason with certainty, after such an autumn as the last. I once was troubled with a similar evil, and only secured a crop by fertilising with care every perfect flower that appeared on some trees. In this case, I attributed the evil chiefly to a cold,

wet autumn, the leaving too much wood on the trees, and commencing to force in the beginning of November—rather too early under the circumstances. I have noticed the same evil under different circumstances; and, perhaps, some of these may meet your case.

The next time I was invited to notice such a defect, the gardener rightly attributed the evil to his slap-dash attempt at forcing, shutting up his house, keeping it rather dry, and giving it at once a night temperature, rather above 60°. The buds swelled and broke weakly. The whole trees betokened distress; even the petals of the flowers looked flimsy; and, in the hurry and scurry of such a steeple-chase, the most important parts never fairly had a fair starting point. All forcing should proceed by gradual and easy changes.

The next time I noticed this defect, the trees had been forced pretty early the previous season, disbudding properly attended to, the wood well thinned and ripened almost by the commencement of autumn. The autumn was a very dry one,—a variety of other matters led to the comparative neglect of the Peach-house,—the soil got extra dried; the trees were all planted, and had their roots inside the house; and the sashes, being merely slid and not removed, prevented even heavy dews and light rains from getting to the trees. The gardener, without closely watching the matter, was in high ecstacies at the leaves dropping so early; believing it to be owing to early maturation, when, in fact, it was partly owing to want of liquid support. When the trees were prepared for forcing, it struck him the borders were extra dry, and orders were given for a good watering. The watering was given by a regular sprinkler, who, standing bolt upright, went over the ground several times with the rose of a watering pot; his mind, if engaged at all, being wholly taken up with the varied curves each drop of water presented as it passed from the rose of the pot to the ground. This all came out afterwards. Meantime, the worthy gardener saw the surface was damp and puddled enough; and, like many of us in other cases, was deceived by appearances. Forcing was commenced in the usual proper and successful way; but the buds did not break kindly—they seemed as if they had been extra hardened and ripened—and patience was brought into requisition. But, as the heat was gradually increased, a good part of the fruit-buds dropped altogether from their sockets; and a great many of those that did open were defective in the parts of fructification. The roots were at last thought of. The gardener, with a Parks' light fork, commenced turning up the soil, and, O horror! beyond two inches from the surface, as respects moisture, the roots might as well have been in the dry sands of the Sahara. Need we wonder that that gardener ever since looks after the wielder of the water-pail, and considers that dryness in the autumn, for the purpose of ripening of wood, may even be carried to an excess.

Note here in passing, that that surface sprinkling not only was deceptive, but, in reality, instead of doing any good, did great and absolute harm. I have had the surface of a border so concreted, for years, that no rains could pass directly into it; and yet, when that surface was broken, the ground beneath it was found moist enough. The sun, beating on that hard surface, so heated it, that moisture was drawn from the ground surrounding it, and freely exposed to the atmosphere and its rains. In like manner, when the surface of the ground is dry, and the heat of the sun, or any heat, acting on the surface, continues to dry it to a greater depth, plants growing in it will often seem wholly unharmed—nay, to rejoice in it rather than otherwise; because, the greater the depth to which the drying heat penetrates, the greater will be the supply of moist vapour that will be raised from still greater depths, and which will be partly absorbed by the roots of plants as it passes them. So long as the surface is dry and warm, this pumping-up of moisture will continue, just as long as there is any

within reach, to come. This, it will be seen, will open up the whole question of deep pulverisation for vigorous crops. But merely moisten the surface of the ground, and you stop at once this moisture rising from beneath. That will only be resumed when the wetted surface has become as dry as before. Few of the Peach roots would be benefited by this inch and a half of surface-watering. All roots beneath that depth were placed in a comparatively torpid state, as respects moisture; unless, instinctively, they struck much deeper down in search of it. Until the surface-moisture was evaporated, no moisture could rise to assist them from beneath. I have noticed vigorous-growing vegetables standing the sun well in hot, dry weather. A warm sunny shower comes and refreshes the foliage, and, rising from the hot ground, places them in an atmosphere saturated with moisture, and everything looks as promising as could be. But what at one time used to surprise me greatly, was the fact that frequently, in a day or two after this refreshing shower, the same plants would flag before the force of the sun's rays, and, in a day or two more, without receiving any watering, would hold up their heads as briskly as ever. The slight shower arrested the rising of moisture from beneath. When that shower was all thoroughly evaporated, then the former capillary hydraulic action of the pumping-up moisture was commenced. Hence, surface waterings are chiefly useful for refreshing foliage, and lessening evaporation from them. Hence, too, all artificial waterings, unless for the above purposes, that do not reach the great bulk of the roots, are worse than useless.

"A great part of my young fruit has dropped. The leaves looked as if they were scalded. I kept up a good heat at night, from 65° to 70°; and, as the weather was very cold and stormy, gave little air, though the sun was very hot at times. Could extra heat effect the disappointment?"

No doubt of it. Heat ruins more Peach-houses than cold. See what they will frequently stand on an open wall uninjured. From 55° to 60° is quite high enough for Peaches at any time at night. From 80° to 85° is hot enough in bright sunshine. In very hot weather, they will stand a higher temperature than that, if air have been given early, and the heat is the result of the rays of the sun, and not greatly, if at all, assisted from the furnace. In frosty weather, 55° will be quite enough at night, and they will take no harm with less. If the air is cold and frosty during the day, prefer giving a little air early, if the sun is likely to be strong; and put out the fire, or lock the stoke-hole door. Sun heat is the best every way—why not use it when it can be obtained, and dispense with coal heat as much as possible? It is when both heats are extreme, and air-giving is too long delayed, that such casualties as these you speak of come as a matter of course. Here is an instance: a cold frosty night; heat kept up from 60° to 65°; a keen, frosty, clear morning; fires rattled up; pipes made so hot that the hand can scarcely touch them; the sun strikes forcibly on the house by eight or nine o'clock; the thermometer rises rapidly. You have heard of the evil of letting in great volumes of cold, dry air, and the heat increases fast; then jerk down go the sashes, when the roasting and the cooling rapidly have managed to do the injury.

Suppose we look at the matter with ordinary common sense. Imagine that either yourself, or the important personage who does the stoking for you, possesses the ability to wield the fire shovel with judgment and economy, which, simple though it may seem, is a difficulty that is never surmounted by some clever people. Suppose that that young active fellow has more of thought and of mind in him, than just to see the necessity of setting a brisk fire going this morning, as a work of routine, because he set one going the day before, when it was really wanted; and that, after going into his house, seeing the thermometer near 60°, and feeling the pipes and flue, and still perceiving them a little warm—just comfortable, and

then, looking at the sky and seeing no clouds, comes to the conclusion that in less than two hours the sun will be telling powerfully on the house, just comes to the conclusion to let well alone, and give poker, shovel, and furnace a rest. The heat getting less and less in the heating medium, the sun heat raises the temperature slowly. When it gets to 70°, and from that to 75°, every alternate sash may be raised an inch or so. If the heat still rise after a short time, raise each sash. If the heat, by-and-by, get up to 80°, or above, give another inch; but unless the sun is very powerful—if the wind is cold and frosty—that will not often be necessary. Here the early air-giving is the safety-valve. No accumulation of greatly-heated vapour can collect at the top of the house. The cold, dry air that enters is heated and moistened by passing through the heated air escaping. We thus guard against the extremes, which, more than anything else, cause young Peach fruit to drop. We can thus use the sun as our forcing medium, and save our coals and shovels into the bargain. If, after such a bright morning, the day should turn out cloudy, boisterous, and stormy, then we can light our fire, whenever there is occasion for it.

Early air-giving is of importance in all weathers. In mild, warm weather, it may, and should be, given freely. In severe frosts, and very cold winds, accompanied with a rather bright sun, I would give a little early; and content myself with that little, if possible, if I had to damp the floors of the house, cool the artificial heating medium, and even slightly shade. It may thus be laid down as a general rule, that great heat from fuel and great heat from the sun should never act together. This acting in unison, and this carelessness in air-giving, have caused many a young Peach to fall that otherwise might have refreshed and delighted the proprietor who paid for all the outlay.

The foundation, then, of successful forcing, is the proper management of the fireplace. When we see great fires in bright, sunny days, and a house half uncovered in consequence—when we find dampers out when they ought to be in, and furnace and ash-pit doors open when they ought to be shut, and huge fires blazing—when the heat is thus forced to spend itself on the outside atmosphere, we may just ask ourselves, if here there are many sure tokens of anxious thought or careful reflection. The waste is often no trifle to those at a distance from a coal field. The injury to the plants cultivated is often a more serious affair. This seems an age for statistics. It would be very interesting to have a census of all the young gardeners who make it an invariable practice to examine the heat of their house, the temperature of the heating medium by feeling it, the thermometer out of doors, and the state of the sky, before touching a poker or a shovel. A clever gardener once showed me an essay, dwelling on the importance of these trifles. He had never seen them alluded to, as a matter of course. Are we greatly improved in attention to these essential trifles now?

R. FISH.

TOMATO CULTURE.

To those who have not attended to Mr. Keane's instructions, so seasonably given, for sowing the seed of this plant, no time must now be lost. In fact, it must be hastened on by the warmest corner of the hotbed; and as soon as the plants are large enough to handle (which is very soon after they are up), they may be potted at once, three into a pot, and again placed in heat for a few days, to be afterwards gradually hardened off; and if they have become pot-bound before finally planting out, so much the better, as they will come sooner into bearing. The plant, being from the tropics, cannot bear cold; the planting-out, therefore, must not take place until all danger from frost is over, or some covering provided to

protect it. In other respects, the plant thrives well in most places, and becomes rampant and gross in proportion to the richness of the soil in which it is planted, and the moistness of the season. But means must be taken to check this, or a superabundance of wood will be the consequence, and the produce of fruit small and very late. Perhaps one of the best ways to guard against this evil, is to sink a large flower-pot at the spot where the plant is to be placed, and put the plant in it, stopping most of the holes at bottom; as a vigorous-growing plant like the Tomato will find its way through the bottom of this pot, and, to a certain extent, ramble abroad for a more extended living; but it is more easily checked in so doing,—the pot itself forming a considerable check. A partial substitute for this is to cut through the roots with a spade, at a little distance from the collar, at times during the growing season, if there is reason to think it is becoming too gross; but if it is bearing well, let it alone.

The situation proper for the Tomato has, perhaps, more to do with its success than the soil. Against a wall facing the south, is, undoubtedly, the best one for it; and it is commonly planted against any vacant space amongst the fruit trees, and, sometimes, to the detriment of the latter. This should not be, especially as the Tomato will grow where trees of any size will not. Against a low wall, or wooden palings, they often do very well; and, in fine seasons, they ripen very well in the open border, tied up something like the Dahlia. That they are not so early this way, as against a wall, may reasonably be expected; but fine, well-ripened fruit, are often produced before frost sets in. Where great quantities are wanted, and wall-spaces scarce and otherwise employed, plant a few plants on a south border; and if the season, more especially the autumn, be a fine, dry one, it is likely the produce may be very satisfactory.

During the period of its growth, stopping rampant shoots will encourage the flowering-buds and promote its fruitfulness; but the plant must be allowed a little time to exhaust its superabundant vigour before it is too closely snubbed in; and after that, stop as often as you like. Generally three or four main stems may be trained up,—say a yard high, or so, and the laterals from them produce the fruit—other considerations being favourable. The soil most suitable for the Tomato cannot well be too dry; and, I believe, if it never rained during the whole summer, they would not take any harm. In fact, it is the superabundance of moisture that is so fatal to their fruitfulness. Stiff, retentive clays only prolong the growing season beyond the proper time; while a shallow soil, that can be reached by the sun's rays, is the one most suitable for this tropical plant; and plenty of stones, and other opening material, seem to be best for its roots to ramble in.

It is needless mentioning varieties, as the common large red one is the kind generally grown; but there is a yellow one, which some admire, and there is a small red, said to exceed the large one in flavour, or some other quality; but the first-named is the more useful. It is proper here to observe, that seeds of this ought to be saved only from the largest fruit; and if they are not to send to any distance, and only for home use, they keep well in dry sand, the pulp decaying during the winter. Damaged fruit (if large) will do as well as any; and a small flower-pot will contain seeds sufficient for most ordinary growers, no washing or dressing being required. I know from experience the seeds grow better; but they are much hardier than they are generally supposed to be; for I have known decayed fruit, rotted on the ground, send up quantities of plants the ensuing season. I have known these self-sown plants ripen fruit, too, the same year; but the quantity, of course, was not so great as those forwarded by artificial means. I mention it here to prove that, after all, the ripening of the Tomato, in favourable seasons, is not a difficult affair. In adverse seasons, with a cold, stiff soil, and moist or late situation,

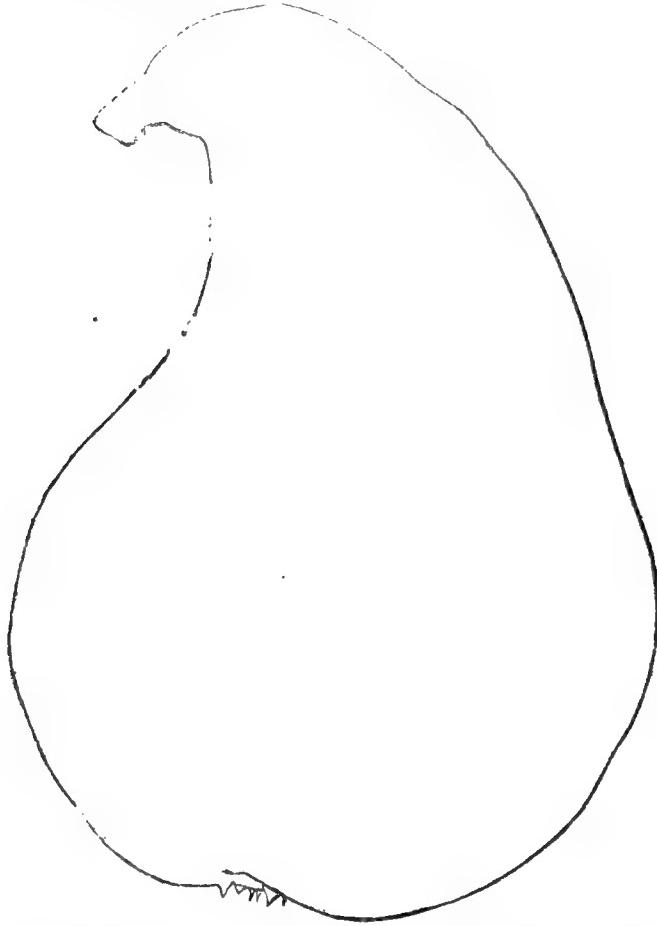
some of the plans mentioned above must be put in requisition; but even then the result will not be so favourable as when sun and dry weather do the work.

J. ROBSON.

FRUITS AND FRUIT TREES OF GREAT BRITAIN. (Continued from page 366.)

No. XVI.—BEURRÉ CLAIRGEAU PEAR.

THIS is a Pear which, though a desirable one for its beauty in large collections, is not possessed of those qualities of richness of flavour and high merit to recommend it for cultivation where space is an object. It is one of those that possess fair, passable qualities, but whose principle use is as ornaments in the dessert. Were it a late pear, and as good in March or April as it is in November, it might rank among the most valuable; but, coming into use, as it does, in November, it has then to contend, at a great disadvantage, with others that are infinitely superior to it; its flesh being generally breaking, or at best only half-melting, and coarse-grained; though we have found it melting.



Fruit fragrant; pyriform and curved; varying from four inches long and two inches and three quarters wide, to five inches and a half long and three inches and a quarter wide; it is quite round at the apex, and tapers gradually towards the stalk.

Skin smooth and shining, of a fine lemon colour, very thickly dotted all over with large russety dots, and here and there large patches of very thin and delicate smooth russet, particularly round the stalk; on the side exposed to the sun there is a glow of orange red, or, as it is sometimes called, an aurora glow, which gives the fruit a very beautiful appearance.

Eye small and open, with long, reflexed leafy segments, which are deciduous, and set in a shallow depression.

Stalk from a quarter to half an inch long, stout, and rather fleshy, and having occasionally a raised swelling on one side of it.

Flesh coarse-grained, half-melting, frequently crisp and breaking, and rarely melting; always juicy. *Juice* watery, sweet, occasionally piquant and vinous, and always with an agreeable aroma, which is sometimes powerful.

Ripens about the end of October, and continues in use throughout November. The tree is not a rank grower, and is, therefore, well adapted for a pyramid, or for bush culture; but more particularly for the latter, on account of the great size of the fruit.

This variety is evidently a seedling from Beurré de Capiaumont, to which it bears a very close resemblance, and of which it is a colossal form. It was raised from seed about the year 1835 or 1836 by M. Clairgeau, of Nantes.

NOTES ON NEW OR RARE PLANTS.

HARDENBERGIA COMPTONIANA. *Benth.* Nat. ord., *Leguminosæ*. Native of New Holland.—A greenhouse climber of moderate growth. Branches somewhat slender, angular, and green when young. Leaves alternate, trifoliate, upon long, stout petioles, which are grooved on the upper side, and based by a couple of ovate-acute stipules. Leaflets on short petiolules, the two lateral ones with a single stipule each, and the terminal one with a pair, ovate, somewhat attenuated towards the point, and furnished with a slightly deflexed mucro. Racemes long, many-flowered. Flowers in pairs. Calyx two-lipped, upper lip entire; lower lip divided into three acute subulate teeth. Standard large, orbicular, reflexed, spreading, and keeled at the back; purple, with, near the base, two green, white-margined spots. Wings obovate. Keel very short, acute, curved.

A very handsome greenhouse plant, which may be cultivated with equal success in pots, or planted out in the greenhouse or conservatory border, and tied to the rafters. A compost of about two parts good fibry loam, and one of peat, or partially decomposed leaf soil, with sufficient sharp sand to render the whole porous. Blooms in the winter and early spring months. Propagates by cuttings in early summer by the usual method adopted for greenhouse plants.

ACACIA SPECTABILIS. *A. Cunn.* Nat. ord., *Leguminosæ*. Native of New South Wales.—Habit dwarf, moderately compact. Branches drooping, smooth; green, striped with red. Leaves bipinnate, with numerous oblong elliptical leaflets, the two terminal of each division nearly orbicular; all glaucous. Racemes long, lax. Heads of flowers large, upon spreading pedicels; bright orange yellow.

An elegant and not over-robust growing kind, very suitable for general cultivation. It flowers from January till March, and ripens seeds in sufficient quantity for propagation.

MONOTOMA ELLIPTICA. *R. Br.* Nat. ord., *Epacridaceæ*. Native of New Holland.—Habit shrubby, erect, freely branching. Branches slender, copiously covered with the small leaves. Leaves alternate, sessile, lanceolate or elliptical, acute, coriaceous, destitute of a midrib, and having the veins diverging from the base to the apex. Inflorescence in short axillary racemes, mostly near the points of the young branches. Florets small, white, each based by an elliptical green bract; and closely imbricated upon the calyx is an involucle of three bracts, the same in texture as the calyx. Calyx five-parted, membranaceous; greenish. Corolla small, tubular, slightly ventricous, with a limb of five reflexed segments, the inner sides of which are clothed with short white hairs. Stamens five, arising from the corolla, and alternating with its segments. Pistil short, simple.

This handsome little greenhouse plant will afford no gratification to the taste of the florist who delights only in the flaunting display of *Tom Thumb*, cross-bred Calceolarias, and such-like pets of the flower garden; but it is a little gem of a good kind, treating us in winter with its lively white blossoms; and ladies, I am sure, would never tire of it in bouquets. Peat two parts, loam one part, and plenty of sand, are the best compost for it; and it must have very perfect drainage, as it is very impatient of stagnant moisture at the roots. Propagates by cutting in early summer, just when the young growth is a little hardened.

HIBBERTIA CUNNINGHAMII. *Ait.* Nat. ord., *Dilleniaceæ*. Native of New Holland.—Habit shrubby, twining, branching. Branches slender, zigzag in outline, smooth. Leaves alternate, long, linear, cordate, and stem-clasping at the base; acuminate at the apex; margins reflexed. Flowers axillary and solitary, on slender peduncles. Calyx of five, ovate unequal, imbricated, reddish-green leaves, ultimately reflexed. Petals five, obovate, undulated; bright yellow. Stamens in two or three series, the outer abortive, filiform, very short; the inner larger, fertile. Anthers oblong. Germen ovate, smooth, one-celled, with four or five ovules. Pistils five. Style incurved, spreading. Stigma obtuse, capitate.

A useful species of Hibbertia; for, though the flowers are fugaceous, there is a long succession, and they are always profuse. A compost of loam, two parts fibrous peat, or partially decayed leaves, and plenty of sand, is the best. Cuttings root with some difficulty in a cool propagating-house. Blooms in June and July.

—S. G. W.

A PEEP AT SOME OF THE LONDON NURSERIES.

SOME business requiring me to travel up to London, and having a day or two to spare, I took the opportunity of giving a hurried visit to a few of the nurseries; and, as I believe, any information I may be able to give will be useful and acceptable to the numerous readers of *THE COTTAGE GARDENER*, I sit down with pleasure to decipher my notes.

The first I called at was Messrs. Rollison and Sons, at Tooting. Omnibuses run there every hour in the day from Gracechurch Street. Tooting is seven miles from Cornhill.

The first thing I noticed was a new and handsome span-roofed conservatory, 150 feet long, 30 feet wide, and 20 feet high. It is used as a show-house. The back wall was covered with Camellias, in flower, chiefly of dark colours, contrasting well with the stone-coloured wall. In the centre there are two beds of earth filled with Camellias, in pots, many of which are in flower. Between these two beds there is a space intended for a fountain, at present occupied with several newly-imported Tree Ferns from New Zealand, some of which had trunks fifteen feet high. They are already pushing forth healthy fronds. In a year or two these will be fine objects. Round the paths, next the glass, I noticed many flowering plants—such as Epacries, Heaths, Dutch Bulbs, Primulas—all in full bloom, rendering the house very gay for so early in the year. A space near the principal entrance is occupied with fine-foliaged plants—such as *Yucca aloifolia variegata*, ten feet high; the Japan Mahonias; the Norfolk Island Cedar, &c. The beds are separated from the paths with a cheap edging, formed with bricks, rounded at the top with cement. If this will last, it is a good invention, worthy of imitation. Time will tell.

I then went into the house devoted to the Heath tribe; and a fine stock was there of all the better kinds—nice bushy plants, such as I should like to have a lot of, had I a house to grow them in: they are just the sort of plants to begin with to form into specimens. The next house was filled with the Indian Azaleas.

Next, I proceeded to seek for my main object in calling, the much-desired-now variegated plants. I found here a good stock, some quite new—as, for instance, *Aristolochia leuconerva*, green ground with yellow veins, from tropical America; *Spigelia ænea*, oval leaves veined with bronze, and spikes of pure white flowers—a handsome plant, introduced by Mr. Linden, from South America; *Begonia nigrovenia*, with black veins; *Begonia Madame Wagner*, all silver over the leaves, excepting the veins, and a blotch in the centre of dark green; *Maranta pulchella*, dark green leaves, striped across with whitish-green—a handsome plant.

The greatest treat, however, was a house filled with seedling Begonias—hybrids from the handsome *Begonia Rex*. Six of the best have been named respectively:—*B. grandis*, olive-green ground with an irregular zone of clear white; stems and leaves covered with red hairs, tipped with white. *B. Urania*, light-green leaves with purple zones, intensely red underneath; the hairs on this variety are very short. *B. nebulosa*, the leaves are covered with round blotches of white in clusters, and a hair in the centre of each spot. *B. Virginia*, the white zones on this variety nearly cover the leaves; margins and centre dark green; the hairs are curiously distributed on the veins only. The young leaves are of a deep rich crimson colour. This is a fine variety. *B. Rollisonii*, leaves dark green, shaded with purple; centre dark purple; hairs crimson, and the leaves underneath are of the same colour. *B. Isis*, a curious species with no hairs on either the stems or leaves, excepting a few thinly scattered on the extreme margin of each leaf. There is a metallic-silvered border on the leaves; the rest is a rich olive-green colour.

The first-named variety (*B. grandis*), is, I was informed, a continental variety, imported in 1855. The rest are Messrs. Rollison's own raising. They have all the habit of *Begonia Rex*, being dwarf and persistent, and quite as easy to propagate. I saw, in a propagating-pot filled with small bits of leaves, many of which were putting forth small leaves and roots. No doubt they will be offered for sale in the spring.

These hybrids are exceedingly interesting, and very beautiful. I never saw a house of plants that gave me more pleasure than this one, filled with those rich-coloured-leaved Begonias. Some few were in bloom, and the flowers were borne on short footstalks; they were of a pale flesh-colour, shaded with pink, and of a considerable size.

In a house filled with Ferns, I noticed a splendid plant, fully two feet, with leaves a foot and a half long, of *Cyanophyllum magnificum*, which I described in a late number. I was glad to find that I had not said one word too much in its praise. This nursery has been noted for many years for the collection of my favourite plants, the Orchids. I found them in good health, and rich in the best kinds. A large number of *Dendrobium nobile* was in bloom. As this species is now very cheap, a good blooming plant may be had for 5s. I think such cultivators as grow flowers to cut for bouquets, would find it a profitable plant for their purpose.

In a span-roofed house there is a good lot of New Holland plants, just a nice size to form specimens; many of them, indeed, are half-grown specimens already. I noted a beautiful thing in flower—viz., *Hovea splendens*. It was a low, bushy plant, every shoot covered with the brightest blue pea-shaped flowers.

The next nursery at which I called was the Messrs. Hendersons', in the Wellington Road, St. John's Wood. The great attractions here now are the favourites of my friend, Mr. Beaton—the Cyclamens. No one that has not seen them can conceive what a splendid show they make. A little fortune might be made out of the blooms, if they were all made into wreaths for the hair, and all well sold. Really it is surprising that these lovely plants, handsome both in foliage and flower, are not more sought after. They are far easier to grow than the Chinese Primrose, and are, as everybody knows, perennials, increasing in size, and the quantity of blooms, they produce every year. The variegated plants here are numerous and well grown; but I did not notice any species different from those I have already described.

The winter garden here is remarkable for its arrangement. You may wander in it, and only see the plants before you—the walks wind so among them. As Mr. Beaton has but lately entered so fully into the minutiae of this nursery, it would only be a useless repetition for me to describe the same thing. I next visited my old home, Pine Apple Place, and the King's Road Nursery, the notes on which I must keep for a future opportunity.

T. APPLEBY.

(To be continued.)

PRESTON HALL.

JOURNEYING from Maidstone to London by the North Kent Railway, and near to the Aylesford station, the traveller gets a short passing view of this elegant mansion; the front of which presents a rich embellishment of Caen stone, combined with Kentish rag, and a greater proportion of windows and ornament than is usually met with in buildings of a private character. This light, airy form is so well suited to the situation it is placed upon, that few can do otherwise than approve the taste of the spirited owner, E. L. Betts, Esq., who has erected such an elegant structure—for the building is quite new. The property, with an old mansion near where the present one is, only passed into the hands of its present enterprising owner ten or a dozen years ago. He then commenced the building of the mansion, and the formation of a new garden on an entirely new site.

The mansion, it is proper to say, fronts both the north and

south. A lofty conservatory terminates the suite of rooms on the east side; the carriage-front being on the south side; a perfectly straight road leads from the front door to the turnpike entrance, lined on each side with *Cedrus deodara*, which, at some time, (apparently not far distant by the healthy condition of the trees), will make an interesting avenue. The greatest drawback in this, is its shortness—but this could not be avoided; and, as a remedy—a very effectual one, too—the line is made to proceed in the same direction across the turnpike road as far as the eye can reach; perhaps two miles. The ground during that distance has undergone a considerable amount of cutting and levelling to make it agreeable to the eye, and, in most cases, it is thickly wooded; but, at suitable intervening places along the sides of this straight drive or opening, choice *Pinus*, *Rhododendrons*, &c., are planted with good effect. On an elevated position in this wood, and communicating with this straight line by another one in a lateral direction, an elegant summer-house or lodge is erected, which is seen from the mansion and surrounding country. This summer-house was placed on a hill of dry sharp sand, where only a few stunted trees, furze, and heath, struggled on for a wretched existence. Mr. Frost, the intelligent gardener here, had it broken up, and thrown into suitable forms, and planted with *Rhododendrons* and other similar plants, which are doing well, and flower abundantly and strongly: thus proving that moisture is not the only thing necessary to make these beautiful plants thrive, as the dry sand in this place must contain within itself some of those elements which are also (most likely), met with in damp clays. Be this as it may; this mound of American plants, with its accompaniments of rustic bridges and other ornaments, all on a large scale, forms a very important feature at this place; and, being at a considerable distance from the mansion and other dressed ground, is come upon quite unexpectedly.

To a stranger entering the grounds at the east side of the mansion, the part immediately surrounding the house seems small. A terrace-wall bounds it on the east and north sides; the ground, receding on the latter side, gives scope for terraces. A large fountain occupies a considerable part of the lower flat, or basement, surrounded by some scroll-shaped beds, edged with Box on gravel. Parallel with the north side of the mansion, and between it and the terrace flower garden alluded to, a broad walk runs in a straight line westward, terminating in a summer-house of suitable construction. By the sides of this broad walk runs a string of beds, alternately long and round-shaped ones—somewhat like those at the Crystal Palace Gardens, but wider apart. The grounds also widen considerably, on both sides, in an undulating manner. At some distance along this broad walk, it is intersected by one from the kitchen garden, which is close at hand; and is entered on the south side by a wide opening of ornamental iron-work, showing the fine range of hothouses at the north side to great advantage.

The kitchen garden inside the walls is small, but is amply made up by the fruit plantation and vegetable ground elsewhere; the north wall being, in fact, almost covered with glass houses, which, being glazed on bars of galvanised iron, have a light appearance. These are all mostly grape-houses, and have borne some excellent crops of fruit that have seldom been surpassed at the metropolitan and other Shows where they have been exhibited; and, probably, would have been still finer, if they had been thinned to the extent some exhibitors are in the habit of doing. In the background, behind this range of houses, are pits for Pines, Melons, and general forcing, and houses for plant-growing; making, in this department only, a larger display of glass than there is in many extensive places. A short distance from this is the old garden that was attached to the former mansion. This has been turned to account; and the south and west walls have been cased with glass, and all heated with hot water in such a manner as to entitle them to the character of glass-houses instead of glass-cases. Excellent Peaches are grown against the walls here; and now and then Vines are trained up the fronts of the glass supports at wide intervals apart, so as not to interfere with the Peach trees. The construction of this range is an upright light of nine feet or more, and a sort of a span-roof from that to the top of the wall; the width of the house being about six feet, perhaps. The front lights are all made moveable, with crank-rods, and levers of the most suitable construction. One-half of the top-ridge lights are also made moveable in the same way: the whole being as complete as anything of the kind could well be. A pathway leading up the centre gives access to the whole at all times: and the healthy condition of the trees,

and the excellent crops they bear, give proof that they duly appreciate the treatment they receive.

In a country like England, where freedom of opinion sometimes outruns the bounds of courtesy, the special right which every one thinks he has to criticise public works and undertakings, is often made use of in private operations as well. In the exercise of this usurpation (for no one can call it a right), there are many who think the flower-garden and pleasure-ground department surrounding Preston Hall much too limited for the other features about it. With plant and forcing-houses of an extent equalled by few, it is often a wonder why the extent of dressed ground is not larger, as the surrounding park—which is of considerable extent and well diversified—gave abundant scope for enlarging the grounds. One thing, however, it is proper to say, that what there is, is remarkably well kept, and reflects the greatest credit on Mr. Frost as well as his spirited employer.

The fruits and plants produced in the houses are invariably good, as well as the keeping of the place generally—every corner being orderly. And though, in such an extensive assortment of glass-houses, and where additions or alterations are continually required, some little upset must, of necessity, be made; yet this is here done with that despatch, order, and method, which ensure a successful issue. Altogether, the gardening at Preston Hall is of a high order, as well as some other things; not the least important to the general observer, being an extensive arrangement of farm buildings, where the chaff-cutting and other works are driven by steam power.

It is, perhaps, proper to say that the mansion stands on a rising ground, the northern slope running down to the river; midway of which there are some good views from the house. The park is well, but not too thickly, wooded; the chalk hills, forming what is called the back-bone of Kent, terminating the view to the north. At the base of these hills, and not a great distance from the mansion, is the famed druidical monument, Kit's Coty house; the origin or object of which has puzzled the learned world for many generations. The neighbouring district is also rich in agricultural and mineral wealth. Potteries, sand for glass works, chalk, and stone lime, as well as brick and other works, give a degree of stir and bustle to a neighbourhood, which, in less enterprising hands, might have been tame and quiet.—R.

THE SCIENCE OF GARDENING.

(Continued from page 366.)

As it is certain that some plants grow more luxuriantly if following one kind of predecessors, than they do if in succession to some others; so is it probable that there are plants which flourish more in companionship with some tribes than they do if associated with other tribes.

This is no result of modern observation, but is asserted by some of the earliest writers on the cultivation of plants.

Thus, in 1570, Conrad Heresbach writes as follows:—" Because there is a natural friendship and love between certain trees, you must set them the nearer together, as the Vine and the Olive, the Pomegranate and the Myrtle. Others," he adds, " have a natural hatred, as the Vine with the Filbert and the Bay;" and Cato, about fifteen hundred years before Heresbach, said that the Vine is at enmity with the Cabbage.

That some plants are benefited by being grown in the vicinity of others seems established by observation, and might be rationally expected. Thus the blue-bottle (*Centaurea cyanus*) is rarely found flourishing, except in company with a corn crop. The benefit arising from such associations is, probably, the consequence of the cereal grasses emitting the usual gases in proportions, and at times grateful to the *Centaurea*; or from their excreting something in the soil that is acceptable to its roots. Then, again, the fragrance of the Rose is said to be increased by having the Onion, or some other *allium*, grown in its vicinity. Phillips, in his poem entitled "Cider," alludes to this result:—

"The Preston Rose unfolds
Her bud more lovely near the fætid Leek,
(Crest of stout Britons,) and enhances thence
The price of her celestial scent."

This increase of fragrance, if it is a truth, probably arises from the same cause that ammonia increases the pungent perfume of snuff. Flavours and scents, we all know, are often made more intense by combination. Musk increases the aroma of all other perfumes.

This probable benefit, derived from association, is explicable

very differently from what has been called "the sociality of plants." The social plants are those that are found herding only with members of their own species. We need only quote as an example the common Heath, which, as Meyen observes, "is the most social plant of all; and if all other plants were to occupy the surface of the earth in the same proportion, there would not be room for more than 5000 species." This sociality is regulated entirely by soil and climate. Thus, the Heath will only grow on a peculiarly siliceous soil, and it cannot endure cold like its frequent companions, the Andromeda and Juniper; therefore, it does not follow them within the Arctic zone.

As some plants are social, and are benefited by being grown grouped with their kindred, so there are others, the hermits of the vegetable world, which prefer being separated from all their relatives. Examples of these are the Sicilian Horehound (*Marrubium peregrinum*); the Blue-bottle Thistle (*Carduus cyanoides*); the Crimson Grass Vetch (*Lathyrus Vissolia*); the Elegant St. John's Wort (*Hypericum elegans*); and the Heath-leaved Sun Rose (*Helianthemum Fumana*). These and some others, it has been well observed, "stand quite insulated, and seem as if they would disappear, did not Nature, in a manner often inexplicable, provide for their continuance." But the most remarkable we have not yet mentioned,—namely, *Forstera sedifolia*, on the summits of the loftiest mountains of New Zealand; *Melastoma Tidorensis*, on the crest of Mount Tidor, in the Molucca Islands; and *Disa cornuta*, on a few spots near the summit of Table Mountain.

Plants are very much benefited by having oxygen applied to their roots, being found to consume more than their own volume of that gas in twenty-four hours; and when applied by Mr. Hill to the roots of Melons, Hyacinths, &c., the first were found to be improved in flavour, the second in beauty, and all in vigour.

We will only quote the details of his experiments on the Hyacinth. They are as follows:—"I have been making experiments, during several winters, on the roots of Hyacinths, placed in glasses of New River water, by immersing, mouth downwards, in the glass, an ounce phial filled with oxygen. These Hyacinths were double varieties, seldom succeeding in water alone, yet not a single bulb failed. On the contrary, both flowers and leaves were bolder and larger than those of the same plants cultivated in the earth with the greatest care."—(*Horticultural Society's Transactions*, i.)

It has also been proved by experiments, that if the roots of a plant are growing in water which partly fills a vessel, the other part being occupied with atmospheric air, the oxygen of that air is gradually abstracted from it. The roots take it from the water as fast as this absorbs it from the air.

But we have evidence still stronger in proof of the absolute need there is for oxygen gas being supplied to the roots of plants. For if, instead of with atmospheric air, the space in the vessel mentioned in the last experiment be filled with carbonic acid gas, hydrogen gas, or nitrogen gas, the plant growing in the water rapidly droops, and dies in a few days.—(*Johnston's Lectures on Agricultural Chemistry*.)

Promoting the presentation of oxygen to the roots of plants therefore, must be beneficial, thus we find, that frequently stirring the ground about them promotes their growth; for, in proportion as the soil is loose can the atmosphere more easily penetrate it. Moist earth rapidly absorbs oxygen from the atmosphere, as Humboldt has demonstrated, but dry soil does not. This affords another reason for frequently stirring the earth about plants during the droughts of summer; for well-pulverised soils admit the evening dews more freely than others more consolidated; and, consequently, dews will be deposited more within their texture, and moisture is more firmly retained in such pulverised soils, inasmuch as that they are not so much heated by the sun's rays, being more pervaded by the air, which, like all gases, is one of the worst conductors of heat.

M. Schubler has more recently published experiments upon this subject, and their results confirm those of M. Humboldt. No earth, in the following table, absorbed any oxygen from the air in which they were confined, so long as they were dry; but when moist, and confined in a similar bulk of atmospheric air for thirty days, they had absorbed its oxygen in the following proportions:—

	Per cent.
Siliceous sand	1.6
Calcareous sand	5.6
Gypsum in powder	2.7
Sandy clay	9.3

	Per cent.
Fine lime	10.8
Slaty marl	11.0
Arable soil	16.2
Garden mould	18.0
Loamy clay	11.0
Stiff clay or brick earth	13.6
Grey pure clay	15.3
Magnesia	17.0
Humus	20.3

The decomposing parts of animals and vegetables contained in a soil are also highly absorbent of moisture: hence the more freely the air is exposed to them, the more effectually will they be enabled to exert this power. By being freely exposed to the influence of the air, such substances are more rapidly decomposed, which leads to a consideration of the practice of exposing soils as much as possible to the action of the atmosphere by ridging, &c. When a soil is tenacious, or abounding in stubborn vegetable matters, as in heath lands, it cannot be too completely exposed to the action of the air; but to light soils, which are, in general, deficient in organic decomposing matters, chemistry would say that ridging is accompanied by evils more injurious than can be compensated by the benefits obtained; for such light soils are easily pulverised whenever occasion requires, are so porous, as at all times freely to admit the pervasion of the atmosphere; and, therefore, by this extra exposure the vegetable and animal remains are hastened in decomposing, and much of their fertile constituents evolved in the state of gas, or carried away by the rains, &c., without there being any crop upon them to benefit by them. Thus theory argues, and practice certainly supports her doctrines. Switzer, one of our horticultural classics, says, "Rich, heavy ground cannot well be ploughed too often to make it light, and the better manure by killing the weeds; as poor, light ground cannot be ploughed too seldom, for fear of impoverishing it."—(*Ichnographia Rustica*, Vol. iii., p. 237).—J.

(To be continued.)

FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 368.)

GRAPES.

SYNOPSIS OF GRAPES.

I. BERRIES ROUND, OR NEARLY SO.

* Black or Purple.

A. Muscats.†	Black Corinth
August Muscat	Black Damascus
Black Frontignan	Black Hamburg
Blue Frontignan	Black July
Caillaba	Black Muscadine
Early Black Muscat	Black St. Peter's
Early Jura Muscat	Black Sweetwater
July Muscat	Black Tripoli
Purple Constantia	Dutch Hamburg
Sarbelle Muscat	Esperione
B. Not Muscats.	Mill Hill Hamburg
Barbarossa	Richmond Villa

** Red, Tawny, or Striped.

A. Muscats.	B. Not Muscats.
Catawba	Aleppo
Grizzly Frontignan	Chasselas de Falloux
Madeira Muscat	Gromier du Cantal
	Negropont Chasselas
	Red Chasselas

*** White, Yellow, or Green.

A. Muscats.	B. Not Muscats.
Chasselas Musqué	Buckland Sweetwater
Early Saumur Muscat	Chaptal
Ottonel Muscat	Chasselas Duhamel
White Frontignan	Chasselas Vibert

† The term "Muscats" includes, besides the true Muscats, the American Grapes, with their peculiar foxy flavour.

B. Not Muscats.

Ciotat
Early Chasselas
Early Green Madeira
Early Malingre
Early White Malvasia
Pitmaston White Cluster

B. Not Muscats.

Prolific Sweetwater
Royal Muscadine
White Corinth
White Nice
White Rissling
White Sweetwater

II. BERRIES OVAL, OR NEARLY SO.*** Black or Purple.****A. Muscats.**

Black Muscat of Alexandria
Isabella
Muscat Hamburgh

B. Not Muscats.

Bidwell's Seedling
Black Champion
Black Cluster
Black Ischia

Black Muscadine
Black Prince
Cambridge Botanic Garden
Gros Maroc
Kempsey Alicante
Lady Down's Seedling
Miller's Burgundy
Céllade
West's St. Peter's
Trentham Black

**** Red, Tawny, or Striped.****A. Muscats.**

None

Morocco
Purple Fontainbleau
Schiraz
Verdelho

B. Not Muscats.

Lombardy

***** White, Yellow, or Green.****A. Muscats.**

Bowood Muscat
Charlesworth Tokay
Canon Hall Muscat
Muscat of Alexandria
St. Laurent Muscat

Cornichon Blanc
Golden Hamburgh
Joanne
Marchioness of Hastings
Scotch White Cluster
Syrian
Trebiano
White Lisbon
White Romain
White Tokay

B. Not Muscats.

Alexandrian Ciotat
Blanche

Aiga Passera. See *Black Corinth.*

ALEPO (*Striped Muscadine*; *Variegated Chasselas*; *Chasselas Panaché*; *Morillon Panaché*; *Raisin d'Alep*; *Raisin Suisse*).—Bunches medium sized, loose, and not shouldered. Berries medium sized, round, of various colours, some being black, others white or red, while some are striped with black, or red and white; sometimes a bunch will be half white and half black; and others are wholly white or wholly black. The flesh is inferior in flavour. The vine succeeds in a warm viney, but requires the hothouse to bring it to perfection. The leaves are striped with green, red, and yellow.

ALEXANDRIAN CIOTAT.—Bunches large, long, and loose, with narrow shoulders. Berries oval. Skin thin, pale yellow, but becoming of an amber colour as the fruit are highly ripened, and covered with numerous russety dots. Flesh firm and breaking, juicy, and well flavoured. Ripens with the heat of a viney. A good bearer, but the bunches set badly.

Alexandrian Frontignan. See *Muscat of Alexandria*.

ALICANTE.—This is a name given to several varieties of grapes in the south of France and in the Peninsula, but is not applicable to any variety in particular. In the department of Gard, it is applied to *Gromier du Cantal*. In Andalusia it is the same as the *Tintilla* and *Tinto* of the same vineyards, the *Mourvède* of Provence, and *Mataro* of the Eastern Pyrenees. Then the Alicante of Bouches-des-Rhône vineyards is the *Granaxa* of Arragon, and *Granache* of Eastern Pyrenees; while, in the neighbourhood of Alicante, the name is given to two or three different sorts. In Great Britain, *Black Prince* and *Black St. Peter's* are sometimes called Alicante; but a distinct variety from all the above, being sent to me simply under the name of Alicante, I have, to distinguish it, called it *Kempsey Alicante*, which see.

Alicantweine. See *Black Prince*.

Amber Muscadine. See *Royal Muscadine*.

Ansley's Large Oval. See *Morocco*.

Arkansas. See *Catawba*.

D'Arboye. See *Royal Muscadine*.

AUGUST MUSCAT (*Muscat d'Août*).—Berries medium sized, round, inclining to oval. Skin deep purple. Flesh very rich and juicy, with a slight Muscat aroma. An early grape, ripening about the end of August. The vine forms a dwarf bush, and on that account is well adapted for pot culture, but it is a delicate grower. It ripens against a wall.

August Traube. See *Black July*.

Auvergne. See *Black Cluster*.

Auvernat. See *Black Cluster*.

BARBAROSSA (*Brizzola*; *Rossea*; *Prince Albert*).—Bunches twelve to eighteen inches long, shouldered, tapering, and compact. Berries round, inclining to oval. Skin tough, but not thick, of a deep black colour, covered with thin bloom. Flesh tender, juicy, and of good flavour, though not rich. A valuable late grape, hanging all the winter; and requires the aid of artificial heat to ripen it. The vine is a bad bearer, except in poor soils.

Barbaroux. See *Gromier du Cantal*.

Bar-sur-Aube. See *Early Chasselas*.

Bec d'Oiseau. See *Cornichon Blanc*.

BIDWELL'S SEEDLING.—This variety, raised at Exeter, has a considerable resemblance to *Black Prince*, of which it is probably another form. It ripens very well against a wall in the west of England by the end of October.

Black Alicante. See *Black Prince*.

Black Burgundy. See *Black Cluster*.

BLACK CHAMPION (*Champion Hamburgh*).—Bunches with short, thick stalks, not shouldered, thickly set. Berries large, roundish-oval. Skin thin, black, or dark purple, covered with fine thin bloom. Flesh tender, but somewhat firm, very juicy, rich, and sweet; having rarely any stones, or more than one. This is about a fortnight earlier than *Black Hamburgh* in the same house, and always colours better and more freely than that variety; the berry is also more oval, and the wood shorter jointed. Ripens in a cool viney.

BLACK CLUSTER (*Auvergne*; *Auvernat*; *Black Burgundy*; *Black Morillon*; *Burgundy*; *Blauer Clavner*; *Early Black*; *Morillon Noir*; *Pineau*; *Schwarzer Riessling*).—Bunches small, very compact, cylindrical, and occasionally shouldered. Berries generally oval, inclining to roundish. Skin thin, blue-black, covered with blue bloom. Flesh juicy, sweet, and richly flavoured. Ripens well against a wall in the open air, and is one of the best for this purpose. The bunches are larger than those of Miller's Burgundy. This is one of the varieties most extensively cultivated for wine on the Rhine and the Moselle, and it also furnishes the greater part of the Champagne and Burgundy wines.

Black Constantia. See *Purple Constantia*.

BLACK CORINTH (*Currant*; *Corinthe Noir*; *Passolina Nera*; *Aiga Passera*; *Zante*).—Bunches compact, small, and short. Berries small and round, not larger than a pea, with some larger ones interspersed. Skin thin, black, and covered with blue bloom. Flesh juicy, sweet, richly flavoured, and without stones. Requires the heat of a viney. This variety furnishes the "Currants" of commerce.

BLACK DAMASCUS (*Worksop Manor*).—Bunches large and loose. Berries large and round, interspersed with others of small size. Skin thin, but tough, of a deep black colour. Flesh juicy, sweet, and richly flavoured. A first-rate late grape, requiring the heat of a hothouse to bring it to perfection.

BLACK FRONTIGNAN (*Muscat Noir*; *Muscat Noir Ordinaire*; *Sir William Rowley's Black*).—Bunches pretty large, cylindrical, somewhat loose, and occasion-

ally shouldered. Berries small, round, and unequal in size. Skin thin, blue-black, and covered with blue bloom. Flesh firm, red, and juicy, with a rich vinous and musky flavour. Ripens against a wall in favourable situations and in warm seasons; but is generally grown in a viney-

(To be continued.)

GRAFTED CONIFERS.

BY MR. W. PAUL, OF THE CHESHUNT NURSERIES, HERTS.

I HAVE long been satisfied that the popular prejudice existing against grafted Conifers has no substantial foundation, *provided proper scions and stocks are used*. But in no branch of horticulture is this matter more important, or worthy of more attentive study. It is unfortunate for purchasers that unsuitable natures should so readily unite to assume the appearance of healthy and perfect trees, while in reality they contain within them the seeds of decrepitude and early death. We could almost wish it was not so; but, as it is so, the best guarantee against disappointment and loss rests in the intelligence, experience, and honesty of the cultivator.

It is well known that the heavy-wooded Pines—as *Pinus ponderosa* and *P. macrocarpa*—will grow very well if grafted on the Scotch Pine; but, so treated, they soon over-swell the stock, become top-heavy, and pass into a stunted and deformed state. If, however, these kinds are grafted on the Austrian Pine, *and the scions are rooted from the lower end*, perfect and durable trees are the result. And this is but an example where many cases of a like nature might be adduced.

But there is also an objection against grafted plants existing in point of time, rather than in fact. If side-shoots of *Pinus* and *Abies* are used as scions, however suitable the stocks, a portion only will form leaders, and these at long intervals of time. Such, therefore, should not be purchased until they have attained the condition of perfectly-formed trees, with good leaders; or the purchaser may have to wait for the dénouement somewhat longer than is agreeable.

Once more. Using a tender stock, as the common Cypress, or China Arbor Vitæ, for the genera *Cupressus* and *Thuja*, is objectionable; because such plants are liable to be killed at the root in case of severe frost. With these exceptions, I cannot see why a grafted Conifer should not be as good as a grafted Apple or a grafted Pear; and if the objections rest only on prejudice, it is most desirable that they should be removed.

Let me now adduce one or two facts in support of these opinions. Many years ago, I commenced forming an arboretum, intended to contain specimens of the most valuable hardy trees suited to the open air in the climate north of London; and these now amount to nearly 1000 species and varieties, gathered from various sources, at home and abroad. At the outset, many of the Conifers could not be obtained otherwise than grafted, nineteen out of twenty of which are now handsome and flourishing trees. *Pinus Lambertiana*, grafted on *P. excelsa*, is fifteen feet high, and everything one could wish for. *Pinus macrocarpa*, grafted on the Austrian Pine, is sixteen feet high. An incident in the history of this latter tree may not be uninteresting to your readers, as showing the advantages arising from the application of such horticultural knowledge as we may possess.

The first year after being turned into the ground, the plant made but little progress, which led me to suspect that all was not right at the root; accordingly, in the month of October, the soil was carefully removed; when lo! the scion was found overlapping the stock on one side. The fact was unsatisfactory, but the remedy was apparent. The point of a knife was inserted two inches above the line of junction, and passed through the bark, drawing it downwards the length of four inches. The projecting portion of the scion, which extended and formed callus nearly the half of its circumference, was then pared down with the knife, and the soil firmly replaced. Two years afterwards, the soil was again removed, and the other half of the scion, although firmly and satisfactorily united, was served in the same way; an abundance of roots was emitted from these incisions; the plant soon commenced growing vigorously, and is now as handsome a specimen, for its size, as any in the kingdom.

Take another instance. A small plant of *Picea nobilis* was purchased of the late Mr. Cunningham, of Edinburgh; it was a mere side-shoot grafted on the Balsam, or Silver Fir. For five or six years it retained the lateral growth; a leader then sprung

into existence, favoured by pruning and liberal feeding; and the tree is now ten feet high, as symmetrical as if it had been cast in a mould.

While speaking of the *Picea nobilis*, I may, perhaps, be allowed to express the opinion that grafted plants may be preferable to seedlings, unless the latter have been raised from foreign seed. It is said that much of the seed perfected in England is the result of artificial fertilisation with the Silver Fir. Now, if this is so, is it not probable that the seedlings will partake, in some degree, of the nature of each parent? And if the habit of vegetating before the spring frosts are gone—natural to the Silver Fir, but from which the *Picea nobilis* is happily exempt—be transmitted to these seedlings, they will clearly be of little value; for, while of matchless beauty, the greatest value of the *Picea nobilis* attaches to the fact that it does not grow until late in spring, thereby escaping the damaging effects of the late frosts.—(The Scottish Gardener.)

QUERIES AND ANSWERS.

EVERGREENS FOR THE BACK OF A COOL CONSERVATORY.

"Please to publish a list of evergreen plants (not Camellias), best adapted for the back wall of a cool conservatory, eighteen feet in height."—A. B.

[*Hard-wooded Climbers*.—Kennedya Marryatii, scarlet; K. Comptoniana, blue; nigricans, purple, green; K. macrophylla, large-leaved and yellow. *Evergreen Shrubs*.—Acacia armata; A. affinis; A. dealbata; A. spectabilis; A. grandis; or the orange tribe. A strong grower, of rather rambling and herbaceous growth, is Cobaea scandens: one plant would soon fill a house. *Succulents*.—Cereus speciosissimus; Epiphyllum speciosum; E. Jenkinsonii; E. Ackermanii. Any of these divisions will render a back wall interesting.]

WALNUT-LEAVED AND ASH-LEAVED KIDNEY POTATOES.

"Messrs. Sutton, in their Catalogue, say, 'Early Ash-leaf Kidney, or Walnut-leaf, a well-known early sort.' I have also noticed something similar in THE COTTAGE GARDENER. But, when in America, two distinct sorts, equally early, were there so called; the *Walnut-leaf*, round, purplish red, and with shorter, finer haulm than the *Ash-leaf*, and, I think, a better Potato."—DIO.

[These are two very distinct varieties. The *Walnut-leaved Kidney* is much more dwarf than the other; the leaves highly glazed; and the tubers form in a cluster, or rather whorl, close round the stem. The *Ash-leaved* has leaves much more like those of the tree from which it is named; the plant rather taller than the preceding; the tubers much larger, and on strings.—EDS.]

HOT-WATER PIPES REQUIRED FOR HEATING.

"I beg to thank you for your polite attention by replying, in your Number 538, of January 18, 1859, to my inquiry respecting the relative proportion of hot-water pipes to space; and will now avail myself of your kind proposal, to furnish further information. Respecting the cubical contents, I multiplied the length by the width and mean height; therefore the contents, 2,730 yards, are correct. The walls are bricks, and contain five windows on two of the sides, or ten in the whole. Six of them being rather large. The room is open to the top, the slates being plastered under. The total height being 36·10, the mean height 26·5—this, of course, if lofty.

"The pipes are laid on the floor, and the floor is not a perfect level. Where the pipes enter from the boiler, I believe the floor to be three inches higher than it is at the point where the pipe from the hot-water ones permits the escape of the confined air. Should not that pipe be connected with them at the highest point?"—P. B.

"We do not now recollect the number of feet of pipe you had; but, so far as we do remember, we think you will want rather more pipe, with such a lofty roof and six large windows. Try, however, with what you have first: you can easily add more, by merely joining them with a connecting inch-pipe of lead, or any

thing else most suitable. Where is your feeding cistern? Is it above the level of the pipes? In your case, if you have no feeding cistern near the boiler, and the pipes rise to the highest point where they enter from the boiler, and decline to the extremity, you might have an open cistern at that extremity, and an air pipe likewise at the highest point. The air pipe should always be at the highest point. But, supposing you feed your boiler independently of the pipes in the house, and from a higher level than these pipes, and the pipes are all close throughout; then, in

your case, it would be advisable to have two air pipes, one at the highest and one at the lowest point. If your pipes rose gradually from the entrance into the room to the farther extremity, one air pipe there would be sufficient, and the circulation would be more rapid than when it declines. When they thus decline, there should be an opening at the highest and lowest points. A small hole drilled, and a stout gas-pipe soldered on, and standing several feet above the pipe, close to the wall, out of the way, are all that is necessary.]

RECORDS OF THE BUDDING AND LEAVING OF TREES.

OBSERVATIONS IN CONNECTION WITH THE PERIODICAL RETURN OF THE SEASONS.

Forest Trees.			Fruit Trees.		Hardy Shrubs.		Grain.			Birds of Passage.		Arrival Date.	Departure Date.		
Name.	First appearance of leaf-buds.	In leaf.	Divest-ed of leaves.	Name.	In blossom.	Ripe.	Name.	First in blossom.	Name.	In flower.	In ear.	When cut.	Name.		
Field Elm				Apple			Lilac		Wheat				Cuckoo		
Wych Elm				Pear	{ Hardy		Privet		Barley				Swallow		
Oak				Cherry			Honeysuckle		Rye				Nightingale		
Lime				Peach			Mountain Ash		Oats				Fieldfare		
Sycamore				Plum			Syringa						Redwing		
Horse Chestnut							Laburnum						Hawfinch		
Common Poplar							Acacia						Crossbill		
Occidental Plane							Yellow Broom						Woodcock		
Oriental Plane							White Broom								
Hawthorn															
Hazel															
Walnut															

THERE is a great desire upon the part of meteorologists, of this country, to obtain returns of the budding and leafing of forest trees; blossoming and ripening of fruit trees; blossoming of hardy shrubs; when grain is in flower, in ear, and time of cutting. Now, amongst your many readers and contributors, no doubt many may be found who would take up this subject; and in so doing they would benefit the agricultural interests of this

country to a large extent, since the more such knowledge is diffused, the better shall we be prepared to adopt suitable precautions in unfavourable seasons.

I enclose a form, adopted by the British Meteorological Society, for such returns. Apologising for taking up your valuable time.—G. V. VERNON, Old Trafford, near Manchester.

THE MINIATURE FRUIT GARDEN.*

THE man who makes six Pear trees grow where one grew before, is entitled to greater honour than that historical individual who produced two blades of grass where only one grew before.

For many years Mr. Rivers has directed his attention to the cultivation of miniature trees. He took his ideas, as he informs us, from the French; whose successful treatment of this branch of gardening so impressed him, that he was induced to introduce the system into England. With what success Mr. Rivers has done so, is now pretty well known from the numerous instances wherein it has been adopted; but the practice is very far from being so universal as it ought to be. The culture of fruit trees in this country is quite in its infancy, and we say so deliberately. There never has been one tithe of the trouble taken with fruit trees as there has been with plants. They were planted, they grew; if they bore, they were allowed to stand, and if not they were cut down; and those that were allowed to stand, stood till their heads were grey with moss; but no pruning at root or top, no manuring, no trouble, were taken with them. They were left to stretch their long, bare, brawny arms over ever-so-much ground, and their roots as far under it, to the exclusion of everything else but itself. In return for all this room, it produced a few fruit at the extremities of the branches. But when trees are cultivated, or "educated," as the French say, they amply repay the care bestowed on them. Did anybody ever hear of an unfruitful tree in a miniature orchard? (barring the seasons). Any tree may be made fruitful by proper management; but when left to itself it lapses into a state of nature. It is to teach how to educate fruit trees that Mr. Rivers has written "The Miniature Fruit Garden," and therein we have results of his labours, and the fruit of his experience. There can be no doubt that the practice of growing all fruit trees, either as pyramids or dwarf bushes, and systematically pruning the roots as well as the

FRUIT GARDEN.*

branches, are the proper and only method for a garden. Standards are only applicable to orchards; and we hope to see the day when there will not be a standard tree in a garden.

We feel the greatest possible difficulty in selecting an extract from Mr. Rivers' admirable little book, where all is equally interesting; but by way of showing how intelligibly the subject is treated, we print the following:—

"PYRAMIDS ON THE PEAR STOCK."

"There are some dry, warm, shallow soils, more particularly those resting on chalk or gravel, which are unfavourable to the Pear on the quince stock; it is difficult to make them flourish, unless great care is taken in mulching the surface, and giving them abundance of water and liquid manure in summer. In such soils pyramids on the pear stock may be cultivated with but little trouble.

"To those who wish to train them as they should grow, one-year-old grafted plants may be selected, which may be managed as directed for young pyramids on the quince stock. If trees of mature growth are planted, they will require the treatment recommended for pyramids on the quince stock, as regards summer pinching. There is no occasion, however, to make a mound up to the junction of the graft with the stock, as the Pear does not readily emit roots. Annual root-pruning is almost indispensable to pyramids on pear stocks in small gardens; and it will much facilitate this operation if each tree be planted on a small mound—the roots are then so easily brought to the surface. This annual operation, which should be done in November, may be dispensed with in soils not rich, if the trees are lifted biennially in that month and replanted, merely pruning off the ends of any long roots. Annual surface-manuring, as recommended for pyramids on the quince, is also necessary, if the trees are root-pruned or biennially removed.

"It now only remains for me to give some hints and directions as to the most eligible mode of root-pruning of Pear trees on pear stocks, which has been practised here with much success for

* *The Miniature Fruit Garden; or, the Culture of Pyramidal and Bush Fruit Trees; with Instructions for Root-pruning, &c.* By Thomas Rivers, of the Nurseries, Sawbridgeworth, Herts. London: Longmans, 1859.

many years. For immediate effect, the trees should be prepared by annual root-pruning for one, two, or three years in the nursery; but if not so prepared, trees of the usual size and quality may be planted, and suffered to remain for two years undisturbed—unless the soil is rich, and they make vigorous roots the first season after planting, in which case operations may then commence the first season. Thus, supposing a tree to be planted in November or December, it may remain untouched two years from that period; and then, as early in autumn as possible, a circumferential trench, twelve inches from the stem of the tree, and eighteen inches deep, should be dug, and every root cut with the knife and brought near to the surface, and the spade introduced under the tree, so as completely to intercept every perpendicular root.

"The treddle-spade used in this part of Hertfordshire is a very eligible instrument for this purpose, as the edge is steeled and very sharp. The following year—the third from planting—a trench may be again opened, at fifteen inches from the stem, so as not to injure the fibrous roots of the preceding summer's growth, and the knife and spade again used to cut all the spreading and perpendicular roots that are getting out of bounds. The fourth year the same operation may be repeated at eighteen inches from the stem; and in all subsequent root-pruning this distance from the stem must be kept. This will leave enough undisturbed earth round each tree to sustain as much fruit as ought to grow, for the object is to obtain a small prolific tree.

"I find that in the course of years a perfect mass of fibrous roots is formed, which only requires the occasional operation of a trench being dug, and the ball of earth heaved down, to ascertain whether any large feeders are making their escape from it. But it must be borne in mind that this circular mass of soil will, in a few years, be exhausted; to remedy which, I have had left round each tree, eighteen inches from the stem, a slight depression of the soil—or, in other words, the trench has not been quite filled in. This circular furrow I have had filled, in December and January, with fresh liquid nightsoil, which has had a most excellent effect. Any other liquid manure would, undoubtedly, have been equally efficacious; but my soil was poor, and I thought it required strong manure. As it did not come in contact with the roots, no injury resulted from using such a powerful raw manure.

"There is, perhaps, no absolute necessity for liquid manuring in winter; as common dung may be laid round each tree in autumn, and suffered to be washed in by the rains in winter, and drawn in by the worms. In mentioning liquid manure, I give the result of my own practice; the great end to attain seems (to use an agricultural phrase) to be able "to feed at home";—that is, to give the mass of spongiotiles enough nutriment in a small space—but not too much—so that a tree may make shoots about four or six inches long in one season (for such, I conceive, ought to be the maximum of growth), and at the same time be able to produce abundance of blossom-buds and fruit. On trees of many varieties the former will be in too great abundance: removing a portion in early spring, cutting them out with a sharp knife, so as to leave each fruit-spur about three inches apart, is excellent culture.

"I have not yet mentioned the possibility of root-pruning fruit trees of twenty or thirty years' growth with advantage. Irregular amputation of the roots of too vigorous fruit trees is, I am aware, an old practice; but the regular and annual, or biennial, pruning of them, so as to keep a tree full of youth and vigour in a stationary and prolific state, has not, that I am aware of, been recommended by any known author, although it may have been practised. In urging its applicability to trees of twenty or thirty years' growth I must recommend caution. The circular trench should not be nearer the stem than three feet; and only two-thirds of the roots should be pruned the first season, leaving one-third as support to the tree, so that it is not blown on one side by the wind—and these, of course, must be left where they will best give this support. The following season half the remaining roots may be cut, or, if the tree be inclined to vigour, all of them; but if it gives symptoms of being checked too much, they may, on the contrary, remain undisturbed for one or even two seasons. If, as is often the case in Pear trees, the roots are nearly all perpendicular, the tree must be supported with stakes for one or two years after complete amputation.

"It will not, perhaps, be out of place here to enumerate a few of the advantages of systematic root-pruning of Pear, Apple, and Plum trees, and of growing them as pyramidal trees and bushes.

"1st. Their eligibility for small gardens, even the smallest.

"2ndly. The facility of thinning the blossom-buds; and in

some varieties, such as *Gansel's Bergamot*, and other shy-bearing sorts, of setting the blossoms, and of thinning and gathering the fruit.

"3rdly. Their making the gardener independent of the natural soil of his garden; as a few barrowfuls of rich mould, and annual manure on the surface, will support a tree for many, very many years—thus placing bad soils nearly on a level with those the most favourable.

"4thly. The capability of removing trees of fifteen or twenty years' growth with as much facility as furniture. To tenants this will, indeed, be a boon; for, perhaps, one of the greatest annoyances a tenant is subject to is that of being obliged to leave behind him trees that he has nurtured with the utmost care.

"My grey hairs tell me that I am not a young gardener; and yet I feel, that in judicious root-pruning and annual manuring on the surface, so as to keep our fruit trees in a nicely-balanced state, we are all inexperienced. At this moment I am reminded of a wall in a neighbouring garden, covered with Peach and Nectarine trees in the finest possible health.

"For more than twenty years a healthy Peach tree was never seen in this garden, as the subsoil is a cold white clay, full of chalk-stones. This happy change has been brought about by biennially pruning the roots of the trees early in autumn, as soon as the fruit is gathered; in some cases lifting them, and supplying their roots with a dressing of leaf-mould, sand, and rotten manure, equal parts. Powdered charcoal, or the ashes of burnt turf and rotten manure, also make an excellent root-dressing for cold heavy soils; but if the soil is dry, and poor, and unfavourable to the Peach and Nectarine, loam and rotten manure are the best dressing for the roots, and also for the surface."

We cannot speak in higher praise of this treatise than to say that it has reached its fifth edition.

VEGETABLE CULTURE AND COOKERY.

(Continued from page 269.)

CUCUMBERS CANDIED.—For this purpose the Cucumbers should be fresh, sound, and at their best. Divide them down the middle into four; take out the seeds, and then cut into lengths of about an inch. Soak them for forty-eight hours in strong brine of salt and water; wash them in fresh water; and then put them into a pan, and cover them with another water, in which let them just boil up. Change the water, and let them boil up again, and continue to boil for about a quarter of an hour; after which, take them off the fire, and let them stand all night in the water to cool. Next morning put them on a sieve to dry. Make a syrup sufficient to cover them; put in the Cucumbers, and boil it up to candy height. Take out each piece of Cucumber; give it one rinse in warm water, to remove the superabundant syrup; then put the pieces side by side on a wire sieve to drain. When sufficiently drained, stand the sieve in a moderately-heated stove for two or three days till they are dry; and, when quite cold, put them into boxes.

CUCUMBERS, TO FRY.—Take off slices lengthwise, a quarter of an inch thick, rind and all; season them with pepper and salt; dip them in flour, and fry them in butter.

CUCUMBERS, TO DRESS RAW.—Pare them, and cut them into very thin slices in a plate; strew salt over them; and, after they have stood for about five or ten minutes, drain off the water, and strew a little more salt over them, and a seasoning of pepper. Add two or three table-spoonfuls of salad oil, and turn the Cucumbers well over in it; then pour over them two or three dessert-spoonfuls of Chili vinegar; or, if that is not at hand, common vinegar will do. Turn them into a clean dish, and serve.

CUCUMBER KETCHUP.—This is an excellent condiment for eating with beef or mutton, and supplies the place of Cucumbers when that fruit is not to be had. Take twelve good-sized Cucumbers, and lay them an hour in cold water; pare them, and grate them down fine into a dish. Grate also six small Onions, and mix them with the grated Cucumber. Season the mixture to your taste with pepper, salt, and vinegar, making it of the consistency of rich marmalade or jam. When thoroughly incorporated, put it into a glass jar; cover it tightly with a piece of bladder, and preserve for use. The vinegar used must be of the best quality.

CUCUMBER MANGOES.—Take large Cucumbers; cut a long slice out of their sides, so as to take out the seeds. Then mix with part of the seeds some White Mustard seed; shred Garlic

and grated Horseradish. With this stuff the Cucumbers as full as possible, and replace the piece that was cut off, binding it with thread. Pour hot vinegar over them for three successive days. The last time boil with the vinegar pepper, flour of mustard, and some salt. Put the Cucumbers into jars, and pour over them the boiling vinegar; and, when cold, cover them closely.—ROGER ASHPOLE.

(To be continued.)

SPRING FLOWERS.

I THANK Mr. Beaton for his article on "Spring Flowers," in THE COTTAGE GARDENER for March 8th. For years I have been getting all the spring flowers I could, but I feel I am very much behind as yet.

I would call the attention of your readers to the Scilla tribe, which are very beautiful, and easily managed. Many of them are now in full bloom. The Double Daisies are also cheering us with their lovely flowers.

There is one plant I would particularly call your attention to—the *Triticeja uniflora*. It is a bulb, and described as half-hardy, and blooming in June. With me (on the Mendip Hills) it thrives in a border under a west wall, without the slightest protection, and blossoms from the third week in March to the end of May. I think no flower is more delicately beautiful; and I wonder that it is not as common as the Narcissus.

The Primroses must not be forgotten. *Primula denticulata* blossomed in a cool frame about six weeks since, and is well worth a little care. *P. involucrata* is a gem, and is quite hardy. *P. Siberica* is a sweet little plant, and is just coming into bloom. The double Primroses make beautiful spring beds, and I only wish I had all the varieties I have seen described, amounting to about a dozen; but I fancy there is great confusion in the nurserymen's catalogues respecting these.

I have also seen descriptions of eight or ten varieties of Hepaticas, but cannot obtain them anywhere. Should any of your readers possess these, or the dozen varieties of double Primroses, or the beautiful single species, almost innumerable, and would communicate with me, I should be glad to treat with them. Letters addressed as below will find me.

One plant more, and I have done. Some years ago, I had the *Myosotis alpestris* on some rockwork, and it was the admiration of everybody who passed my house; and many ladies asked me for flowers and plants. It is one of the best nosegay flowers I know, and I think will make a first-rate bedder: I am trying it this spring, and expect in a month's time to have half-a-dozen gem beds.

For spring decoration, how would a circular bed do with single blue Hepatica in the centre, single wild Primroses next, and edged with double red Hepatica?

I am very pleased to find there is a chance of the General Index being issued. It is very annoying to have to consult the contents of twenty volumes to find what I want.—*MYOSOTIS, Shepton Mallet, Somerset.*

ENTOMOLOGICAL SOCIETY'S MEETING.

THE March Meeting of the Entomological Society of London was held on the 7th inst., the chair being taken by Dr. J. E. Gray, F.R.S., the President, who announced that the Council of the Society had resolved, that in future the Transactions of the Society should be forwarded gratuitously to each of the members, instead of being sold to them at a reduced price as heretofore. This step is one in the right direction, and will, doubtless, bring an accession of new members to the Society, who will thus receive a substantial return, for a portion, at least, of their annual subscriptions.

The list of donations added to the Society's library since the last Meeting was very numerous, including the publications of the Royal, Linnaean, and Royal Agricultural Societies; the Society of Arts; the Entomological Society of the Netherlands; the publication of the Swedish Government, descriptive of the entomological treasures collected during the scientific voyage of the vessel *Eugenia*; also, the accentuated and derivative list of the names of British lepidopterous insects, published by the Entomological Societies of Oxford and Cambridge. The second part, also, of Mr. Waterhouse's catalogue of "British Coleopterous Insects of Great Britain," was on the table.

Fine specimens of the rare Moth *Pelasia nubeculosa*, reared

by Mr. Foxcroft, from Rannock, in Perthshire, were exhibited,—some of them having remained for two years in the pupa state.

A box of insects, collected by Mr. Diggle, at Moreton Bay, in New Holland, was exhibited; and it was remarked, that it contained a large number of beautiful species of minute Moths (Microlepidoptera).

Mr. Stevens also exhibited a box of Butterflies, from Siam, collected by M. Mouat; and read an extract from a letter from Mr. Wallace, giving an account of his entomological captures in one of the islands of the New Guinea group. He had met with several very splendid new species of Butterflies, as well as an entirely new genus of the Birds of Paradise.

Mr. Douglas exhibited a number of insects, captured during the past month near Lee, in Kent: these were chiefly of the order Coleoptera; but amongst them was a very large species of Flea, captured amongst damp grass at the side of a pond. Mr. Waterhouse stated, that he had likewise captured this species of Pulex in moss. Mr. Westwood added, that the insect, which, some time since, he had exhibited at the Society's Meeting, and which he had received from Gateshead as a gigantic Flea (for which he had jocosely proposed the name of *Pulex imperator*), proved, on being microscopically examined, to be a very young larva of a Cockroach, with most of the limbs broken off, and with the body distorted! Mr. Douglas also exhibited the larvae of a very small Beetle, *Trinodes hirtus*, taken under bark, which had all the appearance of a minute Hedgehog.

Mr. Westwood also exhibited three species of insects, which had been forwarded to him by Mr. Neitner, from Ramboddo, in Ceylon, where they commit much mischief in the coffee plantations. They consisted of great numbers of a species of scale insect, *Lecanium coffeeæ*, which infest the leaves of the plant in myriads, sucking from it all its juices. Also, a minute Moth, and a very small two-winged Fly,—both of which, in the larva state, mine the leaves of the coffee between the two surfaces, and thus destroy the vessels by which circulation is carried on. He also exhibited several insects, found in some of the ancient manuscripts in the Bodleian Library, Oxford, where their larvae, known under the common name of Book Worms, do much mischief; the chief predators being two species of Anobium, *A. striatum* and *A. paniceum*.

A drawing of a remarkable dipterous larva was also exhibited by Mr. Westwood, which has been found to be carnivorous, feeding upon the chrysalids of various lepidopterous insects. It belongs to the genus *Therèva*.

A letter from Mr. Gloyne, of Geneva, in Switzerland, was also read, giving an account of the habits of the curious Beetle *Omophron limbatum*, which is found in crevices in banks.

Specimens of a larva, apparently of a species of Anobium, which feeds upon poppy seed, were communicated by Sir James Jeejeebhoy through Mr. Lardner.

Mr. Ianson mentioned the publication of a new catalogue of the Coleoptera of Europe, which had been recently published at Berlin.

Captain Cox exhibited a number of drawings of the Caterpillars of various rare species of British Moths. He also entered into various details relative to the experiments which he had made on the preservation of the Elm trees in the Regent's Park from the attacks of Scolytus; which led to an extended discussion amongst the various members present at the Meeting.

VEGETABLE WAX—CHANGE OF WAX IN BEES' COMBS.

VEGETABLE wax is considered to be a fixed oil; and, perhaps, exists, more or less, in all plants. It serves as a kind of varnish to protect leaves and fruit from the injuries of the weather. In some kinds of plants it greatly abounds; so much so, that wax is produced from them by boiling, as an article of commerce, in America. The *Myrica cerifera*, or Candleberry Myrtle, takes its name from this circumstance: and there can be little doubt that the wax extracted from Irish peat had its origin in the vegetable matter which formed the bogs; but, however wonderful that process, the wax produced by it is not equal to that clarified by bees. This reminds me of "A DEVONSHIRE BEE-KEEPER'S" remarks, at p. 236, respecting a statement from Grundlach, that "to form a pound of wax, twenty pounds of honey are required." I doubt if this accords with the habits of bees; or, at least, how can it be clearly proved? For, as soon as the insects begin to

make combs, they also store up honey in the half-finished cells—even on the first day after they are settled in a new hive—besides their consumption of honey as food while they are making combs, and collecting the other necessary materials for the rising colony. However the statement of Grundlach may favour the notion of bees gorging themselves with honey from the stocks, before they swarm, to enable them to make wax, in general this charge fails; for, if bad weather keeps the bees at home a few days, they not only cease from making combs, but shortly perish from want of food. I may have noticed this in a previous paper, and now pass on to observe the decrease of wax in combs after they have contained brood.

I am not aware of this having been noticed by any writer, but it is, nevertheless, true; and it seems difficult to account for the change of the waxen cells, except on the supposition that it is the consequence of moisture, or secretion from the larvæ, which changes the wax into a sort of varnish to strengthen the cells. If this is correct, it may account for brood combs containing little or no wax; the cells grow tougher with age—whereas, those in honey combs are always brittle. I give these remarks, however, with some disidence; for, perhaps, brood cells may have more propolis in their construction, and less wax, than honey ones. However it be, I may note that it is very difficult to get a sight of bees making combs, in the usual way, as they are hid in the cluster. A few bees, however, may be seen with their segments, or pockets, full of wax; and occasionally a stray one with a scale of it in its mouth. During hot weather, when they commence comb-building, in the additional room in novel hives, without clustering, the insects may be seen ejecting wax from their mouths when forming the cells; and likewise producing wax the same way, to seal up the cells full of honey.

Since the above was written, I find that "A DEVONSHIRE BEE-KEEPER" objects to my statement that wax, which "comes from the stomach through the mouth, cannot be a secretion." If I had called it an expectoration, or a saliva, perhaps that would have been more satisfactory, though seemingly less true; and, according to this view of the case, honey may be called a sweet saliva, for it is ejected from the insects' stomachs, or honey floss, through their mouths into the cells.

I am also called "a bold man," by another writer, for opposing Huber. However that may be, I have to point out to him that humble bees collect no honey from the "nettle," if the common one is meant; likewise, that they frequent the same kind of flowers as the hive bees. They certainly reject some favourite flowers of the wild ones, especially long-tube blossoms; not from any peculiarity of the honey, but rather in consequence of the shortness of their probosces to reach it. I may observe, that sometimes even *cousin Johns* and wasps herd in the same pasture with hive bees: likewise, that this writer does not seem to be aware that the latter collect propolis on their thighs, and carry it home as they do pollen. With regard to my opposition to Huber, I am well aware that what I have said on bees ejecting wax is contrary to the belief of some eminent men; but I am speaking from long and close observations of the insects.—J. WIGHTON.

P.S.—On March 4th, the thermometer (near Norwich) was 64° in the shade at two o'clock, when I observed three different kinds of butterflies, a humble bee, a humble bee, and, what was still more remarkable, a bat flying abroad in the full sun.

THE TRAVELLER'S TREE.—Since we had left the lower country, the rofia had become smaller and less frequent; but the Traveller's Tree was abundant on the sides of the hills, and in the valleys, and in every moist part of the country; appearing, at this elevation, to attain its greatest perfection. This tree, *Urania speciosa*, is, altogether, one of the most remarkable that has been discovered in Madagascar; and the extent to which it prevails may be inferred from the native name—Ravinala, by which it was designated by Sonnerat, its discoverer. Ravinala is literally "leaf of the forest," as if it were the leaf by which the forest was characterised; which is the fact where it abounds, though, in many parts, it is not met with at all. The tree rises from the ground with a thick, succulent stem, like that of the Plantain, or the larger species of Strelitzia, to both of which it bears a strong resemblance. It sends out from the centre of the stem long, broad leaves, like those of the Plantain, only less fragile; and rising, not round the stalk, but in two lines on opposite sides; so that, as the leaves increase, and the lower ones droop at the end, or extend horizontally, the tree presents

the appearance of an open large fan. When the stem rises ten or twelve feet high, the lower part of the outer covering becomes hard and dry, like the bark of the Cocoa-nut tree. Many of the trees in this region were, at least, thirty feet from the ground to the lowest leaves. I frequently counted from twenty to twenty-four leaves on a single tree; the stalk of each leaf being six or eight feet long; and the broad leaf itself four or six feet more. The whole of these twenty-four bright-green, gigantic leaves, spread out like a fan at the top of a trunk thirty feet high, presented a spectacle as impressive as it was to me rare and beautiful; and in this part of the country they were the most conspicuous objects for miles together. Were it not that these vast, bright-green, shining leaves are slit on each side by the winds, and so flatter in smaller portions with the passing breeze, the prevalence of this tree would impart a degree of almost inconceivable magnificence to the vegetation of the country. In the fan-like head of the Traveller's Tree there were generally three or four branches of seed-pods. The parts of fructification seemed to be enclosed in a tough firm spathe, like those of the Cocoa-nut; but the subsequent development was more like that of the fruit of the Plantain. When the pods, or seed-vessels (of which there were forty or fifty on each bunch) were ripe, they burst open, and each pod was seen to enclose thirty or more seeds, in shape like a small Bean, but enveloped in a fine silky fibre of the most brilliant blue or purple colour. But this tree has been most celebrated for containing, even during the most arid season, a large quantity of pure fresh water, supplying to the traveller the place of wells in the desert. Whenever I inquired of the natives, they always affirmed that such was the fact; and that, so abundant and pure was the water, that when the men were at work near the trees, they did not take the trouble to go to the stream for water, but drew off and drank the water from the tree. Having formerly been somewhat sceptical on this point, I determined to examine some of the trees; and, during my journey this morning, we stopped near a clump of the trees. One of my bearers struck a spear four or five inches deep into the thick, firm end of the stalk of the leaf—about six inches above its junction with the trunk; and on drawing it back, a stream of pure clear water, gushed out, about a quart of which we caught in a pitcher, and all drank of it on the spot. It was cool, clear, and perfectly sweet. On further examination, I found that there was no filtration of the water through any part of the plant, as I had been led to suppose when I had seen water drawn by Sir William Hooker from one of the specimens in the Palm-house at Kew. There was a kind of natural cavity, or cistern, at the base of the stalk of each of the leaves, above its union with the stem; and the water, which had been collected on the broad and ribbed surface of the leaf, had flowed down a groove, or spout, on the upper side of the stalk into this natural reservoir, whence it supplied nutriment to the tree, and refreshment to the traveller or the labourer.—("Three Visits to Madagascar," by the Rev. William Ellis.)

TRADE CATALOGUES RECEIVED.

E. G. Henderson and Son's Seed List for 1859. Wellington Road, St. John's Wood, London.—This forms a large pamphlet of eighty-two pages, containing a very full list of flower and vegetable seeds. It abounds in descriptive notes and cultural observations on the more remarkable things,—very useful both in their selection and future nianagement. It contains a great many novelties: but one of the greatest is an extraordinary collection of Gourds and Vegetable Marrows of all conceivable shapes and colours—certainly the best collection we have ever seen enumerated. There you have the *Gooseberry Gourd*, which is just the size, shape, and colour of a green hairy Gooseberry, and about eighty more of intermediate size, up to the great Mammoth Pumpkin, weighing a hundredweight. We also observe an excellent collection of upwards of sixty ornamental Grasses, besides many other attractions which we have not sufficient space to specify.

A Descriptive Catalogue of English and Foreign Novelties cultivated for Sale by John Salter, Versailles Nursery, Hammersmith. Spring, 1859. This includes an enumeration, and descriptions, of those articles for which the Versailles Nursery is celebrated; of which Chrysanthemums form an important feature. Dahlias, also, of select and best varieties; besides Phloxes, Irises, Fuchsias, Verbenas, Scarlet Geraniums, and the other popular florists' flowers.

TO CORRESPONDENTS.

ERRATUM.—The references to the ground plan of Mr. Luck's excellent design for a country house, published in our last but one week's number, ought to have been as follows:—Porch (A), Conservatory (B), Hall (B), Parlour (C). Without this explanation the plan cannot be understood. All the other references are correct.

MR. HALL (J. B. M.).—We will inquire. The communication was from a trustworthy correspondent.

PROPAGATING CLEMATIS—*AZUREA GRANDIFLORA* (*A new Subscriber*).—The Clematis may be raised by cuttings or layers; but is generally propagated by grafting on the *montana*, or other hardy sort. See general directions as to sowing of late; and sow your seeds in pans, covering them slightly; and place the pans in a close, cold pit, or where there is just a little artificial heat. Be sure you do not wash away the seeds with the water-ing-pot.

PROPAGATING DAPHNE INDICA (*M. F.*).—When the plant has bloomed, and the young shoots are about three inches in length, slip them off with a sharp knife close to the older wood, and insert in sand, in a well-drained pot, the lower part consisting of sandy soil; water, and cover with a bell-glass; place in bottom heat, and prevent flagging and damping. Or you may graft last summer's wood with a bud or two on the scion early in spring, and keep close and warm until the union is effected. See a late number as to stock, &c.

PERIODICAL (*Turnips*).—There is none such as you inquire about. Any agricultural queries you may require answering shall have a full reply in our columns.

COOMRAH.—*G. R. L.*, says this is only another native name for the Chinese Yam, *Dioscorea Batatas*.

GREEN FLY ON CALCEOLARIAS.—Well-wisher recommends our correspondent at page 545, to try the "Gishurst Compound." He says, one or two applications, according to the directions given with it, will be effectual.

ROSE OF JERICHO (*G. F. M.*).—We do not feel sure what you mean by this title. There is a Rose called *Rose of Jericho*; and there is the *Anastatica Hierochuntina*, which is called "Rose of Jericho," but is a cruciferous plant. It is an annual. Apply to any of the seedsmen advertising in our columns.

FLOWER GARDEN PLAN (*Fanny*).—Exquisitely done. A Rose garden in the bottom, and on the sides of a sunk panel, is surrounded at the rim of the basin, so to speak, with a circle of twelve flower-beds, just like the twelve hours on the face of a clock, and planted all but symmetrically. The hour-twelve bed, and the half-hour bed, six, to correspond; the quarter-past twelve bed, and the quarter-to-one bed the same. These four cardinal points have each an independent bed on each side of them, and each of these harmonises that next to it. Here is a practical illustration of a certain fact which few have yet got hold of. The fact is, that twelve beds, in circles, are the best number to place, and the easiest number to plant round a given centre. The four cardinal-point beds might be a trifle wider in diameter, to exhibit more clearly the connection between them and their right and left-hand supporters. The rustic basket would be much better if filled with three kinds of Geraniums, a variegated, a *Tom Thumb*, and a stronger one for the top.

RED SPIDER (*G. H.*).—If you have the red spider it is not probable that has been introduced with the Oak leaves into your new hothouse. The air may have been kept too dry, or the insect came in with some of the plants. Paint the walls all over with lime and sulphur. We are not satisfied that you have the red spider from your description.

RINGING VINES (*Subscriber*).—There is no doubt that ringing a branch of the Vine causes the Grapes on that branch to attain a much larger size. The ring of bark should be quite removed; but the alburnum, or young wood next below it, be uninjured. Ringing should be performed as soon as the berries are about the size of No. 2 shot. We only ring such shoots or branches as will be removed at pruning time.

CYCLAMENS (*A Constant Subscriber*).—Mr. Mitchell sent us your note, but no answer to your inquiry. The specimens had better have been sent to our office, which, you will see, we are about to remove.

NAME OF INSECT (*J. W. G.*).—The insect you have sent, found in a viney, is one of the field-bugs, *Acanthosoma hamorrhoidale*. It is not uncommon; and, like all its congeners, smells very unpleasantly when handled. It obtains its food by inserting the extremity of its long rostrum into the tender parts of plants, extracting their fluids.—W.

NAMES OF PLANTS (*J. Forster*).—Your Fern is the *Lastrea Filix-mas*, the male or common buckler Fern; called, also, *Aspidium Filix-mas*. (*Anxious*).—1. Appears to belong to the *Cactus* family; but from the small bit sent, we are unable to recognise what species it is. 2. *Erica persoluta*. 3. *Euphras splendida*. 4. *Lavandula dentata*. 5. *Arabis Caucasica*. This species is often called *A. grandiflora*. (*A. H., An Amateur*).—Your plants, from which the two leaves were sent, are:—1. *Comphocarpus arboreus*, the broad-leaved *Comphocarpus*; and 2, we think, either *Justicia picta*, or *Eranthemum bicolor*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

MAY 25th and 26th. BEVERLEY. *See*, Francis Calvert, Surgeon, &c.

JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. *Director*, S. Pitman, Esq.

JUNE 6th, 7th, and 8th, 1859. GLASGOW. *See*, Robert M'Cowan, 17, Gordon Street, Glasgow.

JULY 1st, 2nd, 4th, and 5th. SHEFFIELD. Wilson Overend, Chairman. Entries close the 15th of June.

DIPLOMATIC CORRESPONDENCE.

FROM THE —— COMMITTEE TO THEIR SECRETARY.

(No. 1.)

[Private and Confidential.]

to observe to the writer, that the question is not one which immediately affects this Show; but, seeing that the duration of peace and quietness is put in jeopardy by recent proceedings, and that all exhibitions have an interest in maintaining concord, the Committee feel it their duty to desire you to explain their sentiments to those to whom you are accredited. It is needless the Committee should repeat, that, situated as they are, they cannot be supposed to have any other object in view than the general good. You will point out that,

" 1^o. The rules of the different Shows, and their limits, or dates, were accurately laid down at the Congress held some time since.

" 2^o. The advocates of trimming do not rely on their own strength—they trust to larger Shows for help.

" 3^o. The arrangement at the Congress before mentioned has been found to work well.

" You will represent that there is probability, if the advocates for trimming disturb the general peace, that, in the event of their defeat, they may not get as good terms in another Congress.

" That little reliance can be placed in the promise of any Secretary; seeing his position depends on his subscribers, who may not wish to disturb present arrangements.

" That it is, probably, more to the advantage of any Society, or Association, to improve its own resources, than to put itself forward as the promoter of change.

" That we have many instances on record of Shows, quite as high-minded and pure, that have been broken up through their ambition and restlessness.

" That it must be fresh in the memory of all members of the Association, that the late Secretary of the Trimmers was obliged to resign, after being defeated on every point.

" If required, you will leave a copy of this.

" I am, &c., &c.,

" NATUREL."

(No. 2.)

ANSWER TO THE FOREGOING.

" The undersigned has the honour to acknowledge the receipt of the communication from the —— Committee. He considers the main question is entirely lost sight of. It is no longer confined to trimming. It is now, whether a large and powerful Show shall oppress a smaller one with impunity. Whether the united voices of many small Shows shall not be entitled to be heard, or whether their Committees shall sit down quietly and submit to whatever insult a more powerful neighbour may choose to inflict. The undersigned disavows, energetically, any ambition, or restlessness, as also the idea, that the line of conduct he pursues is personal to himself. He is only the representative of others. He is aware he holds his present position only so long as his conduct may be pleasing to his supporters; and he ventures to remind the —— Committee, that, on a late occasion, he was happy in being able to render them assistance when they stood in need of it.

" With the highest consideration, &c., &c.,

" SHAVEDD."

(No. 3.)

CIRCULAR BY SHAVEDD, TO THE SECRETARIES OF THE DIFFERENT POULTRY SHOWS, ON THE QUESTION OF TRIMMING.

" The Committee of the —— Show cannot but be aware that, for some time, rumours of discord have unsettled the whole poultry world. The cause is said, untruly, to be traced to this Show. It is necessary the public should be disabused; and the undersigned, strong in the justice of his cause, hereby appeals to every Committee by this circular. He admits that the Show he represents admits trimming—nay, more, it considers it an indication of progress. It is an independent Show, and has a right to maintain its opinion. Other small Shows are not so fortunate—they are under the domination of a powerful neighbour. They are made to feel their position, and are not in any case allowed to show trimmed birds. Can it be considered surprising they should turn their eyes to this Show—that they should desire the like liberty; and even sometimes dream of an amalgamation, which would place them, all being united, in a position that would carry greater weight, and enable them to exhibit on their own terms? By no other right than that of the strongest can the powerful neighbour seek a quarrel on these grounds. Yet, in the field adjoining to the Show of which the undersigned is Secretary, has this powerful neighbour brought pens, commendation cards, food, and water. Report already names the Judges who are to act. Although less powerful, the undersigned has no other course open

" Sir,

" Your enclosure, respecting trimming in Spanish fowls, has been laid before the Poultry Administration. You will please

but to bring up the same material. Many of the opposite parties—exhibitors—promise to show; and some have already applied for entry papers. The undersigned yields to none in his desire for concord; but he has yet to learn that submission to tyranny and oppression is a way to secure it. And should circumstances require it, he will at once publish his prize list, offer premiums for trimmed birds, and appeal to all the lovers of freedom of exhibition in Europe to support him."

THE SKINNUM PIGEON.

I FIND the London fanciers have been working the Skinnums, or sharp-flying birds, up to a standard as a breed. Skinnums, I have before remarked, are a cross between the Flying Tumblers and Dragoons, and have long been bred and trained for flying in London. The fanciers of these long-faced, or flying birds, have gone to the opposite extreme that the Tumbler fanciers adopt, and desire to breed their favourites with as long heads as possible:—one inch and seven-eighths being the length of some. Their colour is mostly the bearded marking—blue, silver, or black; also some bald-headed, or whole blues.—B. P. BRENT.

FATTENING TURKEYS.

"PLEASE to tell me the best mode of fattening Turkeys. I killed one last Christmas that was hatched the 1st of June; it weighed 18 lbs., but the breastbone was far from being covered with flesh.

"I put it up six weeks for fattening. Is there, then, any mode of pressing in the breastbone, in order to make it less obtrusive?"

—AN OLD SUBSCRIBER.

[If you kill a Turkey seven months old, weighing 18 lbs., you have little to learn in the way of fattening. The keel of the breastbone of a Turkey is very deep, and will never be covered with flesh—if, by that, you mean that it should, on each side, be level with the top of the bone. The bone is far too strong to be lowered by any pressure. That process can only be followed with chickens, whose bones are not formed. Before we tell you how to break the breastbone of your Turkey, we will warn you, that when carving, you will often wish it undone; as splinters and pieces will penetrate the flesh, and, getting under the knife, cause it to slip about and tear the flesh, hurting the *amour propre* of a good carver. If you are wilful, you must have your way.

While the bird is hot, and before it is plucked, lay a thickly-doubled cloth on the breastbone; take a short, stout stick, and strike a sharp blow on each side of the bone. You will find, by feeling, whether you have broken the bone. If you have, you will then, being careful that the bone is straight, although cracked, strike it sharply *on the top*, and it will go through the breast into the cavity of the body.

Another method is, when the bird is drawn preparatory to being trussed, to introduce a very stout and sharp knife under the flesh of the breast, till it rests against the base of the upright bone. The back of the knife should be struck sharply with a stout stick, or mallet. This will cut it through; and the bone, being weakened thereby, it will yield to a smart tap on the top, and fall through. If this is well done, there are no splinters.]

WELLINGTON POULTRY SHOW.

THE Show of poultry this year was most excellent; somewhat fewer in numbers, it is admitted, than heretofore. The superiority of the poultry, as a whole, was without precedent; appearing as though most of our principal breeders were determined, if possible, to attain distinction at the last Meeting of the season. Competitors of the highest celebrity, from places even so distant as Devizes, Aylesbury, and many other equally remote districts, will, therefore, be found holding prominent positions among the successful ones. Nor did the poultry breeders of Salop in any instance resign their own, without a good trial for the mastery. We doubt much, however, the policy of holding the Show at the season just now selected,—early eggs are even the desideratum of all exhibitors; and a Show of three days' continuance so late in the spring, must, necessarily, encroach much upon their arrangements. From this cause only is the diminution as to numbers to be attributed. The poultry exhibited, however, as a whole, were shown in the highest possible condition. The Show was held in a tent, in the rear of the Bull's Head Hotel; and the general arrangements were most satisfactory. The untiring

exertions of the Honorary Secretary, Mr. William T. Jones, gained the commendations of everyone; and, we are informed, the inhabitants of the district have adopted a substantial mode expressive of their approval. Already about sixty pounds have been spontaneously contributed towards a fund which will be placed in the hands of a Committee, to be applied to the purchase of plate, or some similar memorial, to testify their high appreciation of the ability that gentleman has evinced in the superintendence of their various Exhibitions. It is supposed that the amount now at the disposal of the Committee will yet be considerably augmented. We may safely say, there was scarcely an indifferent pen to be found throughout the whole collection; and at once proceed to a few remarks as to the various classes.

The Spanish were very good; the three winning pens ran each other closely. It is but rarely we have seen so excellent a pair of hens as those in the first-prize pen. The Grey Dorkings were very good, but certainly not equal to the truly magnificent birds that competed at Wellington last season. The class for Black-breasted and other Red Game fowls, was excellent. Three of the most highly-reputed Game exhibitors throughout the kingdom secured the premiums, leaving many first-rate pens among the simply commended ones. Some of the Black Game fowls were likewise very good; but the Piles, Duckwings, and Whites, were exhibited in indifferent condition. The Hamburgs of all classes were superior—none but most excellent specimens standing even a remote chance of prize-taking. The collections in these classes caused great interest among the visitors. The Polands only mustered three pens; but they were all praiseworthy, and in first-rate feather. Among the Cochin-China fowls, undoubtedly, the Grouse-coloured ones were the most perfect. The *any other variety* class was well supported: it contained perfect pens of Malays, Rumpless, Black Hamburgs, Crow fowls, or Guelders, besides Brahmans, &c. The Game Bantams were a very pretty collection. The deterioration in the Sebright Bantams, however, was surprising, when it is called to mind how very highly birds of this description, from this neighbourhood, stood at all our principal Shows during former years. They are now convincing proofs of the disadvantages of long interbreeding, without the infusion of fresh blood. The Single Game Cocks were the pride of the Exhibition. To find an indifferent bird was an impracticable task; and, as the premiums offered were most liberal, the exhibitors had strained every point to secure them. Somewhat singularly, both first prize in the general class for Game Cocks, and also the silver goblet in the class confined exclusively to Shropshire exhibitors, were secured by "Brown Reds;" and, we were credibly informed, the fowls thus attaining so enviable a distinction were brothers.

The weather during the first day was excessively boisterous; nevertheless, the Show was well supported by the neighbouring nobility, and each successive train brought numerous visitors.

We now quote from *Eddowes's Shrewsbury Journal*, the most important and extensively circulated newspaper of the district:—"We have now come to the conclusion of the catalogue; the Show is undoubtedly successful in one sense; we hope the attendance will make it pecuniarily so. The Judge on this, as on former occasions, was Edward Hewitt, Esq., Spark Brook, Birmingham, to whose courtesy we are indebted for much valuable information. Even this gentleman—celebrated as he is for his tact and discrimination—had, we believe, to use all his talent in selecting the prize Game cocks. We presume he satisfied every one, for we did not hear one of his decisions caviled at. In conclusion, we would suggest, that if the Show were held either at Christmas or in June,—a little earlier, or a little later,—a much larger quantity of the feathered tribe might be brought to Wellington, and so make the matter more interesting to all concerned."

SPANISH.—First, J. K. Fowler, Prebendal Farm, Aylesbury. Second, J. Busst, jun., Walsall. Third, C. R. Nelson, Newhall Street, Birmingham. (Competition excellent.)

DORKINGS.—First, The Hon. W. W. Vernon, Wolseley Hall, Rugeley. Second, J. D. Hewson, Coton Hill, Stafford. Third, T. Burgess, jun., Burleydam, Whitechurch, Salop. Highly Commended, T. C. Eyton, Eyton, Wellington, Salop; Rev. J. Hill, the Citadel, Hawkstone. Commended, T. C. Eyton; Master G. E. Meredith, Longdon Parsonage, near Wellington.

GAME (Black-breasted and other Reds).—First, G. W. Moss, the Beach, Aigburth, Liverpool. Second, Right Hon. Lord Berwick, Cronkhill, Salop. Third, W. Dawson, Selly Oak, Birmingham. Highly Commended, W. Dunning, Newport, Salop; G. W. Moss; Hon. W. W. Vernon. (A most excellent class.)

GAME (Black and Brassy-winged, except Greys).—First, W. Dawson. Second, H. J. Taylor, Haygate, Wellington, Salop. Third, R. G. Hawkins, Eyton Mill. Highly Commended, H. Parry, Ellesmere Port, near Chester.

GAME (Duckwings and other Greys and Blues).—First, Right Hon. Lord Berwick. Second, J. H. Slaney, Wellington, Salop. Third, W. Anslow, Fyton, Salop. Highly Commended, G. W. Moss; T. W. Jones, Wellington.

GAME (any other variety).—First, R. W. Fryer, Hinton Road, Hereford (Piles). Second and Third, S. Dicken, Aston, near Wellington, Salop. Commended, R. W. Fryer (White).

HAMBURGS (Golden-pencilled).—First, J. B. Chune, Coalbrookdale. Second, T. Taylor, Burleigh Villa. Third, J. Martin, Mildenhall Mill, Claines, Worcester. Commended, T. W. Jones.

HAMBURGS (Golden-spangled).—First and Third, J. B. Chune. Second, W. R. Lane, Bristol Road, Birmingham. (Superior class.)

HAMBURGS (Silver-pencilled).—First and Second, T. Keable, Rowdefield, Devizes. Third, H. Corbett, Aston Hall, Shifnal.

HAMBURGS (Silver-spangled).—First, T. Taylor. Second, H. B. Chune. Third, Right Hon. Lord Berwick. Highly Commended, T. W. Jones. Commended, Right Hon. Lord Berwick.

POLANDS (any variety).—First, W. Dawson. Second, T. Burgess, jun. (Silver Polands). Third, R. W. Fryer (Buff).

COCHIN-CHINA (Cinnamon and Buff).—First, J. Cattell, 26, Worcester Street, Birmingham. Second, J. Busst, jun.

COCHIN-CHINA (any other variety).—First, J. Cattell (Partridge). Second, H. James, Walsall (Partridge Cochin). Third, J. Busst, jun. Highly Commended, — Cartwright, Oswestry. Commended, Master J. Doyle, Llandulius, Rhyl (White Cochin); R. W. Fryer (Grouse).

ANY OTHER VARIETY.—First, W. Rogers, Woodbridge, Suffolk. Second, J. K. Fowler. Third, Hon. W. W. Vernon (Guiderlands). Highly Commended, T. Taylor (Rumpless); J. B. Chune (Black Hamburgs).

BANTAMS (Game).—First, J. Camm, Farnsfield, Nottinghamshire. Second, Hon. W. W. Vernon. Highly Commended, G. Finch, Worcester (Duckwing).

BANTAMS (any other variety).—First, J. Cattel. Second, Rev. J. Hill (Gold). Commended, R. W. Fryer (White).

DUCKS (Aylesbury).—First and Second, J. K. Fowler. Highly Commended, J. Price, Londonderry, Bedale, Yorkshire. Commended, T. Groucock, Eolas, Salop.

DUCKS (Rouen).—First, Hon. G. T. Howard, Charlton, Malmesbury, Wilts. Second, J. R. Rodbard, Aldwich Court, Wrington, Bristol. Highly Commended, T. Keable; Miss M. Charlton, Apley Castle, Wellington, Salop (Muscovy). Commended, J. Price; H. Evett, Admaston Hall.

GAME COCKS.—First and Second, G. W. Moss. Third, Right Hon. Lord Berwick. Fourth, G. Carey, Sandon Farm, Stone, Staffordshire. Highly Commended, G. W. Moss; T. Taylor; W. Dawson; R. Swift, Southwell, Notts; Hon. W. W. Vernon. Commended, R. S. Arnold, Easenhall; B. Vaughan, Ketley, Salop; St. J. C. Charlton, Apley Castle. (One of the best classes ever exhibited.)

SPECIAL PRIZE (the gift of Mr. J. B. Chune).—*Game Cock*, the property of any gentleman residing in Shropshire.—Silver Goblet, S. T. Smith, Ironbridge. Very Highly Commended, Right Hon. Lord Berwick. Highly Commended, G. Wycherley, Wellington; Right Hon. Lord Berwick. Commended, H. Evett.

NATURAL HISTORY.—We saw a nest of Blackbirds on Wednesday, March 9th. They were eight or nine days old. Swallows were seen in Chelsea on Sunday, the 6th inst.

PIGEONS.

POINTS OF THE VARIETIES IN ACCORDANCE WITH THE PROPOSED PRIZE LISTS.

(Continued from page 374.)

XI. THE FINNIKIN, or Tournans.—The chief point of this sort—viz., its curious movements in the air, is scarcely appreciable in the show pen. The other points are its mane and plumage. One class may be offered for it; as, although it is not now to be had in England, I have little doubt some of them, or their sub-varieties, as Turners and Smiters, will be introduced from the continent.

I believe some of the subvarieties have appendages in the shape of point-head, and slippers.

XII. THE CARMELITE.—The five points are:—1st, legs, short feet, heavily feathered; 2nd, size, small; 3rd, beak; 4th, head, pointed; 5th, plumage (magpied).

This is the only variety, named, that has not yet been introduced into this country.

XIII. THE SWALLOW-TAILED PIGEON.—The chief point is the prolongation of the outer tail feathers, like the forked tail of the Swallow.

A class may be offered to attract them, though I have only heard of one pair ever being in England.

XIV. THE ANTWERP (Dove-faced).—The five points are:—1st, beak, like a Dove's; 2nd, eye, bolting; 3rd, forehead, raised; 4th, shape, compact; 5th, feather (black snatches in mealy best). Two classes for varieties:—1st, mealy; 2nd, any other colour. (?)

XIV $\frac{1}{2}$. SHORT-FACED BELGIAN.—This is a (*Liege*) cross between Antwerp and Owls, sometimes touched with Dragoon. The points are the organs of locality:—Large prominent eyes; close-feathered and wild-looking; shape, something between the

Owl and **Rock**. Three classes for the varieties:—1st, Blue; 2nd, Mealy; 3rd, Chequered.

XV. LONG-FACED FLYING PIGEONS, or Skinnums.—The three points are:—1st, longest face; 2nd, clear eye; 3rd, plumage. Three classes for the varieties:—1st, Long-faced Beards; 2nd, Long-faced Baldheads; 3rd, Long-faced Blues.

This breed has only lately been worked up to a standard, and I am not sure I have given all the points.

The Third Division of Fancy Pigeons. Toys (twenty varieties).

Their only property is feather, the colouring, or accurate division of colours, or marking. Some have only one mark, as in the Priest and Shield; others have two, as in the Spot and White Spot; and some three, as in the Nun; or four, as in the Monk. In the Suabian, and other spangled Pigeons, it is in their beautifully chequered, or grained, feathers; while in the Archangels, it is the division of the body in two colours, fore and aft; and in the Lahore, or Martin, above and below. Some have a turned crown, as the hood of the Nun and the Breastplate, or the point-head of the Angels. Others are smooth-headed, as the Magpie; and may be hooded or not, as in the Swallow or Starling-breasted. Most have clean feet; others have small feathers on their feet, as the Breastplate and Stork; while some are heavily feathered, as the Half Moons and Ice Pigeons; and others are as often clean as feather-footed, as in the Swallow and Shield.

These appendages are not permanent, and do not constitute a property, though they add to the embellishment of the variety. Inasmuch as feather is their only property, purity of race is not called in question by their wearing the hood and slippers, or even the frill and moustache. Toys are of mongrel or questionable extraction; and these appendages are merely assumed, and are not distinguishing features. Feathered feet are, I consider, a hindrance to the bird, if it has to get a part of its own living; and, consequently, I would not recommend such to country amateurs. I do not think the prizes for Toys should be so high as those for Fancy Pigeons; perhaps half as much. They should have the following twenty classes:—

1st, the Suabian; 2nd, other Spangles; 3rd, Archangels; 4th, Breasts or White Archangels; 5th, Nuns; 6th, Monks and Capuchins; 7th, Priests; 8th, Terns or Swallows; 9th, Magpies; 10th, Spots; 11th, White Spots; 12th, Helmets; 13th, Shields; 14th, Breastplates or Latz; 15th, Storks; 16th, the Martins or Lahores; 17th, the Black-backed Gulls; 18th, the Starling-breasted; 19th, the Swiss or Half Moon; and 20th, the Ice and whole Blue Pigeons. I believe all these twenty varieties are bred in England, but are more or less common. The seven best-known are those indicated in the Model-Prize-List numbers—50, 51, 52, 53, 55, 57, and 59, which classes may suffice for an ordinary show; but such exhibitions as the Birmingham, Halifax, and Crystal Palace, should award a class to each variety. Prizes, of course, to be withheld if the specimens are inferior.—B. P. BRENT.

DOUBLE EGG.—Perhaps the following may be interesting to your readers:—I had a White Cochin hen lay an egg to-day weighing $5\frac{1}{2}$ ounces, $8\frac{1}{2}$ inches round lengthway, $7\frac{1}{2}$ inches in circumference, containing a perfect yolk and white, round another perfect egg in the centre, with a perfect shell.—H. CHURCHILL.

OUR LETTER BOX.

WEIGHT OF DORKING EGGS (*Ferdant*).—Dorkings do not lay an egg so large as might be expected from their size. The average weight of their eggs is only $2\frac{1}{2}$ ozs., so yours at $2\frac{1}{2}$ ozs., are not much out of the way. The Cochin-Chinas' eggs average only $2\frac{1}{2}$ ozs. in weight, and they are still larger birds.

Eggs (A Poor Man).—Probably those you mention will be as good as any others. It is a very remunerative price.

LONDON MARKETS.—MARCH 21.

POULTRY.

Our market is getting bare. The unusually mild weather has caused all wild birds—as Snipes, Woodcocks, Plover, and Wild Fowl—to pass out of season; and the spring poultry—as Ducklings, Goslings, and Chickens—are hardly ready. Hence a rise in price, which will be only of short duration.

	Each.		Each.
Large Fowls	5s. 0d. to 6s. 0d.	Goslings	7s. 0d. to 7s. 6d.
Small ditto.....	4 0 " 4 6	Ducklings	5 0 " 5 6
Chickens.....	3 6 " 4 0	Guinea Fowls	2 6 " 2 9
CockTurkeys.....	9 0 " 10 0	Rabbits	1 4 " 1 5
Hen Turkeys.....	6 0 " 7 6	Wild ditto.....	0 8 " 0 9
		Pigeons	0 8 " 0 9

WEEKLY CALENDAR.

Day of M'nth	Day of Week	MARCH 29 TO APRIL 4, 1859.	WEATHER NEAR LONDON IN 1858.					Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.				
29	Tue	Pinnelia incana.	30.013—29.828	61—26	S.W.	—	43 af 5	26 af 6	12 m. 4	25	7 7
30	W	Grevillea linearis.	29.738—29.509	60—44	S.W.	.01	41 5	27 6	27 4	26	6 48
31	Th	Boronia Frazeri.	29.371—29.985	61—34	S.	.30	39 5	29 6	40 4	27	6 39
1	F	Dillwynia sericea.	29.846—29.312	47—29	N.E.	.02	38 5	30 6	52 4	28	4 3
2	S	Diplacus glutinosus.	29.917—29.447	59—31	N.E.	.02	36 5	32 6	3 5	29	3 45
3	SUN	4TH, OR MIDL. SUNDAY.	29.613—29.542	61—43	S.W.	.09	34 5	33 6	sets	27	3 27
4	M	Epacris grandiflora.	30.100—29.879	57—35	N.E.	—	32 5	35 6	27 a 8	1	3 9

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-two years, the average highest and lowest temperatures of these days are 57.8° and 34.6°, respectively. The greatest heat, 78°, occurred on the 3rd, in 1848; and the lowest cold, 15°, on the 30th, in 1856. During the period 139 days were fine, and on 85 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

BEANS, BROAD.—Earth-up the early crop; but, before doing so, sprinkle some soot along the sides, to save the stems from slugs.

BROCCOLI.—Sow *Early Penzance* and *Snow's Winter White*, for cutting in January and February; and *Purple Sprouting, Knight's Protecting*, and *Dilcock's Bride*, a new sort, in high repute, for cutting in March and April.

CARROTS.—Sow *Waite's Intermediate*, or *Long Surrey*, for general crop.

CAULIFLOWERS.—Stir the soil amongst the plants under hand-lights. Supply them freely with water, to prevent buttoning. Prick out, on a slight hotbed, the plants raised in heat.

CELERY.—Prick out the spring-sown on a gentle bottom heat, and protect with a frame, or hand-glass, until well established.

CRESS.—Sow *Extra Fine-curled*. It should be cut often, when it will continue to shoot. It is useful, not only for salad, but for the breakfast-table, and for garnishing.

CUCUMBERS.—As the days lengthen, and the sun becomes more powerful, a brisker heat in the beds may be kept up with advantage. Attention to be given to a due supply of air and water. If green fly, or thrips, appear, immediate recourse must be had to fumigations with tobacco.

ENDIVE.—Sow the *New Imperial Batavian*; it produces a fine white heart.

LETTUCE.—Plant out all remaining winter plants, and prick out the spring-sown.

ONIONS.—Sow the *Silver-skinned* on a poor, dry piece of ground, to produce picklers. Plant out the autumn-sown, if not done before.

PEAS.—Sow *Waite's King of Marrows*, *Woodford Green Marrow*, or any other approved sorts, for succession.

RADISHES.—Sow, and keep up a regular succession by sowing a few every fortnight.

SEA-KALE.—Remove the covering as soon as it is done with. If any more plants have to be covered, let it be done before they grow long.

FRUIT GARDEN.

APRICOTS, PEACHES, and NECTARINES.—Disbudding a little at a time, and often, is better than removing a great many at once. Keep a sharp look out for the green fly on the young shoots, which should be syringed with tobacco water as soon as perceived.

GOOSEBERRIES.—Remove suckers from them, and from all other fruit trees, as soon as they make their appearance.

FLOWER GARDEN.

BEDDING-PLANTS.—Continue to put in cuttings of all that are likely to be required, and pot off all that are rooted or struck. *Scarlet Geraniums*, *Verbenas*, *Calceolarias*, *Petunias*, and other such plants for bedding out, will do better if removed to a cold frame, as the first step to harden them off for planting out in due time.

CALCEOLARIAS.—Shift on the young stock, placing them

low in the pots to encourage them to throw out young roots from the lower part of the stem. When they have made fresh growth, to be stopped, to keep them dwarf and bushy. Cuttings taken off now root readily in a gentle bottom heat.

CHRYSANTHEMUMS.—When well rooted, to be potted off singly into small pots; and when they have made fresh growth, to be topped back to three or four eyes, to make them dwarf and bushy; and the tops put in, if wanted, as cuttings.

CLIMBERS.—Plant against walls, arbours, or to ascend upon poles, trees, &c.

FUCHSIAS.—If grown in a pyramidal form, and planted in a row at each side of a walk, or singly on the margins of a lawn, they are most ornamental during the summer and autumn. They require to be grown in a moist, warm temperature, and to be syringed frequently. The green fly must be kept down by all means; for, if allowed to get a-head, it soon cripples them. Stout cuttings taken now from the old plants, when two or three inches long, stuck into a pan of sand, kept wet, and placed in a gentle bottom heat, will root freely. If potted when struck, and properly attended to afterwards, they will make fine blooming plants this season.

NASTURTIUMS.—Sow.

PANSIES.—Plant out into beds those wintered in frames, seedlings, &c. Stir the surface of the soil in the beds planted in autumn, and fill up any vacancies. Sow seed.

POLYANTHUSES.—Sow seed. Plant in beds and borders. Divide the roots for increase, and plant the offsets.

TRITOMA UVARIA.—Purchase and plant for autumn display.

WEEDS.—Take every opportunity of eradicating them. Hand-weed where practicable, as, at this season of showery weather, it more effectually answers the purpose than hoeing and raking.

WILLIAM KEANE.

EXHIBITION OF HYACINTHS.

MESSRS. CUTBUSH AND SON'S, HIGHGATE.

It was a common sum, when I first went to school, to make out the quantity of land which a cow could graze over with a rope tied to her tail, and the other end of it fastened to a stake driven into the ground—say in the centre of a meadow; the cow, and the tail, and the rope, being of a stated length. But the adage says, “No animal can go beyond his tether,”—that being the old name of the rope or chain with which to tether animals at grass. And if that were so, the tether might have been tied to a ring in the nose of the cow. Now, whether you take the view of the adage, or of the cow's-tail way of getting to the end of the tether of the Horticultural Society, you shall come to the same point; and if for “animal” we substitute “animation,” we shall now find that all the animation of that venerable lady is out at the end of the tether. The first practical illustration of that fact was the announcement of a Camellia Show at the Vauxhall Nursery, and of the Hyacinth Exhibition, at which we shall now glance.

Mr. Cutbush finding there was no competition for Hyacinths this spring in London, and not judging it neighbourly to disturb the people of Edinburgh so soon after the Burns' festival, he determined to have a show of his own—to ring the bell and answer it himself—and the success of these resolves is already beyond a doubt. The Camellias and the Hyacinths have succeeded thus exhibited. There were, on an average, five hundred visitors daily, the first week, to see the Hyacinths, and as the weather cleared up, the interest increased; and, instead of one week, Mr. Cutbush had to give them another whole week of it. And next year, if all be well, he means to make a similar hit five times the size—spring flowers, forced flowers, and Hyacinths, on a grand scale for a private firm, as compared with a public society. The thing will pay, and that is the grand consideration; and the end of it will be, that every month of the season will bring out some exhibition of the kind within the fading shadow of granny's apron.

Whoever has a name for some popular plant will find it to his advantage, to his fame, and fortune, about London, to make a yearly show of it, and to make the show liberal—a good hearty thing of it—no ostentation, no schedules, and no stinginess. Let all comers come and go just as if the flowers were their own, and then they are as safe as the Bank of England.

At Vauxhall they fill up the show-house with fresh Camellias as fast as they sell; but Mr. Cutbush had no idea that he could sell so many. The first experiment of a show was capitally arranged. The show-house was fitted up for the trial by darkening the front lights with green baize, and the passage on both sides with the same. The roof, three-parts of the way up, was covered with tiffany; and there was a door at each end of the show—not at each end of the house, for the show goes up the whole south front, then round the farthest end, and up out of sight along the west front. All this part was covered with fresh moss, in which the pots were plunged; and on the other side of the way was a platform of mixed flowers; then a band of Hyacinths on a higher level; and behind them were forced Geraniums, Rhododendrons, Persian Lilacs, Azaleas, and ever so many others. Let us take the kinds as they were, and see what we can learn from them; for that should be the grand aim and end of all the reporting of shows, of nurseries, and of private places. The mixed platform was set out thus—three kinds of single *Van Thol* Tulips; and here the scarlet *Van Thol* is just as good, in a smaller flower, as *Vermillion Brilliant* is in the larger and later kinds. This scarlet is newish, and yet scarce, but is the best of them; the white is a cream colour. *Scilla amæna* in small pots, and four bulbs in a pot, do better than out of doors, and one of the best things to line the front of a show-house. A front row of it, and a row of dwarf variegated Geraniums behind it, would be exactly the right thing. Jonquils, single and double, large and small, sweet-smelling and with little or no scent. *Polyanthus Narcissus* of which there are, at least, six or seven quite distinct kinds, out of forty kinds that are only botanically distinct. Of Azaleas, endless varieties; *Citrus ramosus*, and its kinds; *Primula dentiflora*, an excellent show-house kind without forcing, like the early Rhododendrons, "also forces itself." Chinese Primroses, single and double. *Mignonette*. The forced Geraniums were—*Crimson King*, *Alba multiflora*, and *Blanchfleur*; but the latter had such a running sale, that every morsel of growth was cut up for increase: it has proved to stand the heat as well as *Alba multiflora*; and when it gets as common as that *Alba*, the *Alba* must go into lodgings like the Horticultural Society. *Blanchfleur* is the best white forcing Geranium ever raised; but *Larkfield Rival* is well spoken of; and I can vouch for *Crimson King* as the best scarlet, or red, gerbera that is to come in at Christmas and through January. The *Rhododendron ciliatum* forces itself also, if put under a cold frame in November; also, *Virgatum*, which has the same kind of

flower, but only one-fourth the size of *ciliatum*; but then *Virgatum*, as I said of it from the Clapton Nursery, flowers like an Epacris—one flower with every leaf all up the stalk, not at the top like all other Rhododendrons. It is a true Rhododendron; but some of the botanical parts are differently arranged, and it ought to be the mother of an entire new race of early bloomers without forcing.

And now for the grand show itself. All the kinds on sale have been bought to prove them; and everyone which does not come up to an English notion is popped out of sight, and the name is crossed out of the catalogue. In practice, or, at all events, for practical purposes, there is no use, or reason, to class Hyacinths as single or double. Class them as I do; and I learned the way from the ladies who class them properly, and by their proper colours. Three shades of scarlets—deep scarlet, light-rose, and pink, and all blushes; just as one would plant them, or put the colours in shades. Blues the same—dark blue, light blue, porcelain blue, and pale blue. Then pure whites; and, after that, they all come in fancy colours—as indigo, black, and white, all in one flower. Violet, tinge over a light, or deep, bronze, in one flower, or a deeper or lighter self-colour, for which we have no proper name; but to attempt to class the colours in single, or double, flowers separately, is just like children playing at marbles, as compared with men of business and women of taste.

The highest-coloured, and the best of each colour, are as follows:—*Aurora*, *Rutilans*, *Solfaterre*, *Napoleon III.*, *Monsieur Feasch*, *Amy*, *Coccinella*, *Lady Sale*, and *Robert Sterger*.

Next and lighter reds are—*Mrs. Beecher Stowe*, *Madame du Lac*, *Madam Hodson*, *Circe*, *Charlotte*, *Mary Annie*, *Cosmos* (fine), *Florence Nightingale* (very fine), *Von Schiller* (fine), *Princess Royal*, *Susannah Maria*, and *Cavaignac*.

The next class is of different degrees of blush—*Czar Nicholas*, *Francina*, *Lord Granville* (fine), *Duke of Wellington*, *Norma* (very fine), *Bouquet Royal*, *Grandeur à Merveille* (fine), *Groot Vorst*, *Elfrida* (nearly white, fine), *Tubiflora* (fine), *Grand Blanche*, *La Blaine* (fine), *Anna Maria* (fine), *Lamartine*, (fine), *Cosmos* (fine), *Dolly Varden*.

Creamy white next—*Miss Burdett Coutts* (splendid), and *Mine d'Or*. The only really good two in this rare class; and the two which come the nearest to them, in the last section, are—*Elfrida* and *Honneur d'Amsterdam*.

Yellow. The best yellow is—*Anna Carolina*, and *Heroine*.

The pure whites are very rich—*Tour d'Auvergne* (the best of them), *Victoria Regina*, *Talleyrand*, *La Deese*, *Don Gratuit*, *Madame Van der Hoop* (beautiful), *Grande Vainqueur*, *Mont Blanc*, *Grande Vidette*, *Prince of Waterloo* (fine), *Gloche Magnifique* (all very fine).

Now, that is just how they should be planted—the purest white outside, and the deepest scarlet in the middle of a circle, or back row.

The blues, purples, and fancy shades ought either to be by themselves; or, if in a bed with the above, a row of pure white should come between them and the scarlets. Last year, the best blue was *Baron Van Tuyll*; but now *General Havelock* is far before it in all respects, *William I.* next to it, then *Baron Van Tuyll*. The three most really blue, and very fine, are—*Laurence Coster*, *Prince Van Saxe Weimar*, and *Baron Van Tuyll*. But take one, and the best one, of each of the four shades of blue, and we have *General Havelock*, *Baron Von Tuyll*, *Laurence Coster*, and *Sir Colin Campbell*—the four best degrees of comparison in cultivation out of a very rich class, the light blues being their force and strength as—*Grand Lilas* (fine indeed), *Nimrod* (the same), *Paarlboot*, *Comte de St. Priest*, *Prince Frederick*, *Orondates* (fine), *Blocksberg*, and *Grande Vidette*, very large and pale blue.

Shaded blue, *King of the Netherlands*, nothing more to match the peculiar shade.

Lilac blue, *Porcelain Sceptre*, and the nearest to it is *Prince Frederick*.

Purplish-lilac, *Dandy*, and *Honneur d'Overeen*; but there is too much red for lilac, and too much lilac for purple in both of them,—rather call them fancy lilacs. There is only one real purplish-lilac, and a most magnificent thing it is—quite new, and, what is better, the name is *Prince of Wales*. They say Her Majesty wore a dress of this colour at the wedding of the Princess Royal, or about that time, with a foreign name to the colour, for which we have no equivalent.

It has just struck me that bronzy-lilac would tell with the colour of *Dandy* and his *Honneur d'Overeen* better than fancy lilac. But these new colours and new kinds must be ordered in all the collections next year; and some ladies will soon decide on how to plant or place them.

Give me the tune, I know where to whistle it; but, after all, I have one more Hyacinth, and I cannot make up my mind where to place it. The name is *Koning Van Holland*; it is a creamy yellow, with a blush-red tinge, just like a Ghent Azalea of such a caste. And I have one more, the most ladylike of all the Hyacinths, single, of course — there is a chance for you. It is indigo blue and violet, with a man's name—*Argus*, a man with many eyes—and he would need all at Hyacinth Shows. I spoke of *Lord Byron*, a simple old Hyacinth, on account of the two different colours which were so distinctly defined in each flower after it was past its best. *Coccinella* was the nearest to it at this show.

GERANIUMS.—Mr. Cutbush has the most uniformly-grown houses of Geraniums I ever saw. I could pick the first hundred, and say they were made in the same mould; and so with the rest. All the bedding kinds he finds a ready sale for; and his stock of variegated Geraniums is as good-looking, and just as uniform as the rest. He has the shot-silk bed variegated, or old *Scarlet Variegated*; but the fellow to it, the old *Crimson Variegated*, is not in any nursery that I see, although it is the best bedder of the two; besides being a crimson flower. It was in attempting to get the plain green original crimson from this plant that the *Imperial Crimson* made its appearance.

Leptodactylon Californicum is kept here all the winter in the cutting-pots, with sand over; and they come in the spring from cuttings as fast as blue Lobelias, of which—or say of *speciosa*—Mr. Cutbush will have ten thousand plants to offer in May; an equal quantity from Ipswich and from Southampton have been mentioned to me since I told how scarce it was about London, at the beginning of the propagation, when good plants of it would fetch a shilling each; but it will be just as cheap in May as usual.

A large number of very fine plants of *Lisianthus Russellianus* were in the same house as the French-spotted Geraniums. All the best bedding plants are propagated here, as everywhere, to a very great extent; and now *Tropaeolum elegans*, from the Crystal Palace, is seen here by the score or hundreds; also the new Phloxes, and the Hepaticas, by the square yard. One bed of the single white was four yards one way, and three yards the other, in the fullest bloom. It was not this, but the double white I never saw.

Tritonia media was just out of bloom, and *Tritonia aurea* getting a-head surprisingly; but in the Experimental Garden, where it is grown as an evergreen, the young growth is now six inches long, after resting to the end of January, and after flowering to see the last Chrysanthemum out of the house. Cyclamens are just coming in vogue at Highgate; but there are no *vernus*. Stove and hardy Ferns, Begonias, variegated plants, and fine-leaved plants, as everywhere. Two match specimens of *Acacia Drummondii*, four feet by four feet. Many match pairs among the Conifers, and all the new ones, do remarkably well in the free air and fine yellow loam of Highgate. Cuttings of variegated Hollies by the ten thousand, and all the Conifers, do as well from cuttings

as from seeds, except the Firs and Spruces. Evergreen Oaks, in pots, plunged, and up to four and five feet regular. Irish Yews, new Roses, a Maiden Hair Tree forty feet high (a fine specimen), Wellingtonia, above five feet, and going to double its rate of growth for the future by docking the lateral growth.

The best hybrid Rhododendrons, hardy Heaths, and *Andromeda floribunda*, doing to perfection, in strong yellow loam. Deodars in it grow faster and more spiral than the Larch. The old Glycine made shoots, thirty-three feet long last summer, against a wall. Ten or twelve of them will be layered at every second joint; and the sale for it is as good as at any period from its introduction. A fine grove of standard Mulberries, the most wholesome fruit we grow—as, if one happens to partake of too much fruit, this is the best corrector. A large and varied collection of nice rock plants, Everlastings, Feather, and Pampas Grasses.

But anyone who can spare a day from London should go to Highgate, to breathe fresh air, and see all these fineries, and ask to see the Hyacinth-bed, and the early Tulip-beds in the private flower garden in front of Mr. Cutbush's house.

The Tulip-beds are in four distinct colours, and the large Hyacinth-bed is edged with the *Tournesol Tulip*—one of our old best dwarf forcers. The colours of the Tulip-beds are brought out by *La Candeur*, for the white; *Imperator*, red (an improvement on the old *Rex rubrum*); *Yellow Rose*, a bright yellow; and for purple he uses the *Couronne Pourprée*, a very decidedly dark purple. All these are double flowers, and such as a man of business would plant for his own “sweet home.” For, after all is said and done, we must all come to that. D. BEATON.

FRUITS: ON WHAT DO THEIR QUALITIES DEPEND?

I AM well aware that this is a question which no person is able fully to answer; involving, as it does, so many considerations, and so many debatable points, which await a vast amount of inquiry before they can be determinately answered. Such, however, constitutes no solid ground for avoiding an investigation. Our pomological societies are doing the state some service in this matter. No man, however experienced, but may enlarge his mind by examining the statistical information that their reports contain. I verily had thought that I knew all about the *Winter Nelis Pear*—a great favourite of mine for years; but I could not but feel that I had acquired interesting information in comparing the various conditions, both above and below ground, which certain exhibitors furnish; added to this, there was the testing of my own opinions as founded on what I had experienced. I do hope that those who continue to exhibit will carefully state a few of the main conditions under which the fruit was produced. No man can put such information to better use than a really good gardener—a man experienced in such things. There is no spoiling him with crude notions; and, after carefully digesting the whole, he is in a capital position to sum up the evidence, and, as Burns said, to “prent it.”

On what conditions, then, does the quality of fruits depend? Let me first state what conditions are inimical to quality in the average of fruits:—The ripening too much hurried; ripening, in some cases, arrested through low temperatures; excess of root-moisture; also of humidity in the air; gross and succulent growths; deficiency of light; a stagnant air through the want of a due circulation; and lastly, the attacks of insects.

Now, these remarks, although applying, in some cases, almost exclusively to indoor fruits, I intend to offer in such a shape as to be common to all.

A forced, or hurried, ripening, whether occasioned in doors or out, is in general averse to high qualities. This

may be particularly observed in Peaches and Melons; and is, doubtless, the reason why fine-looking fruit, at our exhibition tables, frequently do not possess those high qualities which their appearance and kind indicate. We also know, that, in hot climates, many of our fruits become vapid and worthless; but Nature has provided special kinds adapted to the climate. It is here necessary to observe, that an over-slow or a retarded ripening is, in some cases, prejudicial; and this is, perhaps, most manifest in some of our Pears, which, if kept much beyond their natural ripening period, assume the character of petrifactions in some cases.

Excess of root-moisture is to be avoided. Thorough drainage out of doors, and a cautious use of the waterpot in doors, are the means within our reach to avert this evil. Fruit-bearing plants are apt—like many of the animal creation—to prove glutinous, especially when there is a heavy draw on their system; and in the ripening process, where very high flavour is desired, we do not want too much of the water:—it is more on the high and perfect elaboration and assimilation of the stores of the plants that we have to depend. Nevertheless, it may, be laid down as an axiom in fruit-ripening, that the foliage must be in a perfectly healthy condition when the fruit is ripening, or undergoing that change which forms a crisis in their history. Thus we find, that if Melons—it matters not what kind—have decaying foliage when the fruit is turning for ripeness, the flavour is sure to be deficient, and the eye-part becomes spongy. It, therefore, becomes necessary with all thin-folaged fruits (which, of course, are liable to sudden and profuse perspirations), to keep up as much moisture at the root as will sustain a healthy foliage.

Too much air-moisture is, of course, not desirable. This, out of doors, can scarcely be avoided; but, in forcing processes, it is under control. It produces an inactive atmosphere; and not only impedes, in degree, a free transpiration, but also a proper admission of light. In fact, the ripening period is no proper time for any undue amount of absorption.

We will come now to succulent growth, as, in most cases, a foe to intensity of flavour. The Peach is, at once, a good instance. How is it that we seldom obtain such large and fine Peaches from young and gross trees that we do from those arrived at maturity? Simply because the growth, at extreme points, being so exuberant, much of the collateral and subordinate wood is robbed for the sake of this great impulse. Pinching these robbers, therefore, in equalising the sap, causes the inferior portions to receive a more regular supply. In short, the remarks apply to almost every kind of fruit, especially to those of rapid or impulsive growths. Thus, we know that it is a common practice to stop or pinch Pines, Melons, Cucumbers, &c., all of which are of rapid growth.

Deficiency of light is the next consideration as concerns flavour and quality. It is well known that both flavour and colour, in fruits or vegetables, can only be obtained through the influence of a liberal amount of solar light. Now, our variable climate is, we know, very liable to dull or dark periods; and the anxious gardener is often annoyed by cloudy skies. It surely becomes us, therefore, to adopt those cultural means which place the plant or tree in such a position as to receive, with facility, whatever light occurs. But not only is flavour in fruits dependent on a liberal amount of light; their size and general character are also particularly concerned in the affair. Who has not noticed the inferior character of fruits, such as Apples, Pears, and other ordinary fruits, in the interior of badly-pruned or neglected trees?

A free circulation of air is of the highest importance in giving flavour and character to fruits. This, it may be said, more immediately concerns those under glass; inasmuch as the means taken to secure light out of doors will guarantee a free circulation of air. Melons coddled

for want of air can never be full-flavoured. Indeed, the richest I have ever tasted have been from frames, or pits, which had air liberally all night as well as day: they were, consequently, ripened by the slow process. Peaches, too, require abundance of air all the time they are ripening, and they must have time.

Freedom from insects is indispensable to flavour in fruits. Who has known good Grapes, Melons, Peaches, &c., produced from trees infested with red spider?

I think these together are essentials to the production of first-rate fruit; and without a due attention to them, such cannot be obtained. But, of course, as the foundation-stone, we must have a healthy and well-conditioned root and good kinds. That atmospheric influences, heat, light, air, &c., variously modified and combined, produce varying results in the fruit, can be well evidenced on all sides. We gather *Marie Louise* Pears from a generous aspect on a wall; the fruits large, finely-skinned, and of a beautiful creamy appearance: we fancy we can almost see into them without cutting. We take a second lot from a well-handled espalier, or ordinary tree: they are but two-thirds the size, and their skin a complete coat of fine russet. The first shall be exceedingly fine in texture, but the flesh not particularly rich; the latter less fine in texture, but of a much higher flavour. This at once points to differing atmospheric conditions, the soils being alike.

R. ERRINGTON.

FLOWER GARDENING ON A NEW PRINCIPLE.

HAVING, at page 369, explained my reasons for disapproving of the present fashionable way of cutting up plots of ground intended for flower-culture into small, fantastically-shaped figures, to be planted, as the case may be, in some heterogeneous manner; and having promised to explain a different plan, whereby the confusion inseparable from the planting of small, narrow, or long-pointed shaped beds, with but a very limited space between them, may be avoided; and a result more pleasing, because more clear and distinct, will be attained. In making this wide departure from the usual course of arranging and planting a geometric garden, as sanctioned by the highest authorities of the day, I acknowledge some little misgivings at making myself properly understood. Perhaps the best way to do this is to explain what, in a general way, I am most unwilling to do—that is, what has been done here (Linton Park) towards accomplishing the object alluded to.

To make the case more clear, I will briefly describe some of the features of this place, beginning with the mansion. This is situated about midway up a ridge of some considerable elevation; the south front commanding a wide range of view, extending over the greatest part of that finely cultivated district called the Weald of Kent. A spacious terrace runs along the south side, and east and west ends, surrounded by a balustrading; the south side of which rests on a retaining wall, eight feet high. The sloping ground to the south of this terrace has been cut into a series of slopes and landings, and planted with good effect. A broad flight of steps, with landings corresponding to the ground features, leads down the centre from the upper terrace to the basement below; which, until last year, was a plain lawn, but which my worthy employer determined to convert into a flower garden. After a considerable outlay in excavation and levelling, a panel, nearly level, was formed; which, though not exactly a parallelogram, may be described as being 180 feet by 160. This compartment, being the one on which the new mode of planting was adopted last year, it is needless, perhaps, continuing the description farther; excepting to say, that its southern extremity terminated in a slope, beyond which the ground receded considerably towards the boundary fence, which is a wall, or ha-ha,

seven feet and upwards high, to be surmounted hereafter with a balustrading. This secondary basement is also formed into a flower garden of a different description; subordinate to the upper one, and, of course, planted in a different manner.

It will generally be admitted that a level area of the dimensions given above, and commanded by a terrace or promenade, twenty-eight feet above it, would be the very place for a geometric garden; and from the floor-line of the principal suite of rooms in the mansion, an additional perpendicular height of twelve more feet is gained; but, taking it from the terrace, the position, doubtless, is good. Even with this twenty-eight-feet elevation, I have seen several highly ornamental designs of geometric gardens, which could not be introduced here and planted without creating confusion. For, be it remembered, that, although we have this twenty-eight-feet perpendicular height, there is a base of more than four times that number of feet before the centre of the design could be reached; and, as explained in my former article, a plant of whatever height could, under such circumstances, cast its shadow four times its height beyond it; thereby confusing and deranging that symmetrical feature which forms the principal beauty of such things. Of course, this must be still worse when the spectator is not so much elevated above the design, as in the case here mentioned: and there are a great many so circumstanced. It was, therefore, with a view to remedy this, that I planted a portion of the prepared ground last year as soon as it was ready—which, it is proper here to say, was rather late in the season; and, in fact, the whole was not finished in time to plant at all.

A large portion of the space was levelled, and a central bed of an-oval form was made, surrounded by a broad gravel walk and green verge. This dimension of the oval was 84 feet by 62 in the clear—a good-sized bed to fill. Our juvenile friends may calculate, at their leisure, how many plants such a bed would take, at the usual rate at which bedding plants are recommended to be put in—say nine inches apart each way. I was not able to give the bed half this number, not having the required plants at the time. As the reader will be anxious to know how a large bed like this could be made to look well, I may say that the bed was marked out into a figure of a plain but pleasing description, every part of which could be plainly and distinctly seen from the upper terrace. It was then planted in three colours only—scarlet, blue, and white; the latter being used as the ground colour. In fact, the only plants used were *Tom Thumb* Geranium, a blue Verbena, a white Verbena, and the variegated Alyssum. The latter, being planted as a stringing around the *Tom Thumbs* and blue Verbenas, gave a very distinct outline to the figures these plants occupied; and the whole, being about the same height, was kept uniform and trim without any trouble or attention of any kind whatever after planting: the only defect was, that some of the stringing was not planted close enough, and the white Verbenas were also very thin. Nevertheless, the bed looked well, and was generally admired, as all its parts could be so distinctly seen. The edging of Alyssum, acting as a sort of hedge, kept the other things in their proper places; while the massiveness of the whole gave a greater amount of floral display than is usual, when small patches are promiscuously thrown together, which they too often appear to be when planted in beds with narrow paths between.

One of the reasons in favour of the above way of planting is, that whatever design is decided upon to plant, it may be done, and look well all through the season, by taking care in selecting the plants proper to occupy it; for even an intricate geometric figure may be traced out (if not too small in its parts), and planted with plants as near of a height as may be; and the portions which, in other designs, would be walks or the ground of those figures, might be planted with something else. In my

case, I used the Alyssum and white Verbena for this purpose. Other plants might be used; though I confess I do not know anything so suitable as this Alyssum, which contrasts so well with almost everything it is planted with, and more especially with the green verges; for, in my case, I planted a band of it all around the outer edge, as well as around each figure of the design; and, in fact, used it extensively for the like purposes on all beds cut out on grass.

Of the figures suitable to work into a bed or plot of ground like the above, I need only say that the plainer they are the better they look. I could easily have given the one adopted here last year; but there is so much diversity in such things, and the eye becomes tired of looking at the same thing too long, that another design will be adopted this year; although with the same description of planting.

I may likewise add, that besides the large bed above alluded to, there are other large spandrels right and left of it, scarcely less than the centre bed, which were planted in much the same manner; and which will be again repeated, but in a different way, this season. Perhaps some one will be asking, How are ladies, and other company, to get at the plants in the centre of such masses? To such inquiries, I may say that flowers in such prominent positions are to be looked at, not cut; as the same kinds can be grown elsewhere, for the latter purpose, as they are here; for we have other flower gardens. I think most people will agree with me in excepting the most prominent flower garden from all fair operators with scissors and baskets, as well as the more ruthless young gardener in his search after bouquet flowers.

I cannot conclude this chapter without a suspicion that some one will be hinting at what an ugly blank there must be when flowering plants are removed from such a large space as the one alluded to; and I almost guess I hear some chuckle at the deformity, and contrast their box-edging, scroll-shaped beds, and other fanciful ornaments. Even in this winter arrangement I will not altogether allow them to have the whole credit on their side; for large space allows of a certain kind of winter ornament which we have adopted here also, and which I will, at a future time, explain.

J. ROBSON.

THE SCIENCE OF GARDENING.

(Continued from page 383.)

WE omitted to mention, when considering the excretions from roots, some recent researches of Professor Gasparini, a Neapolitan physiologist, whose judgment and faithfulness may be relied upon. M. Walser had endeavoured to show that no such excretions are formed (*Ann. des Sciences Naturelles*, xiv., 100. *Second series*), but Professor Gasparini refutes his conclusions. We shall have occasion to refer to his experiments, tending to establish as a fact that the greater part of vascular plants absorb their food from the soil—not by the tips, or spongioles, of their fibrous rootlets, but by hairs formed at the base of those spongioles. These hairs, which the Professor calls suckers, become covered before they decay, which they do periodically, with grains, or clots, to which the soil around adheres. He witnessed these suckers on plants of Barley, Scurvy Grass, Rape, Rye, and Wheat, open at their ends, and discharge those clots which he had observed floating within those suckers in a limpid fluid. The discharge was preceded by a peculiar movement in the suckers, similar to that which occurs before a pollen-bag bursts. Warm water hastened the emission.—(*Ricerche sulla natura dei succiatori e la escrezione delle radici*, 1858.)

The benefit derivable from the access of the atmospheric gases to the roots of plants, and the knowledge that fertile pulverised soil absorbs and retains from them moisture, explains why plants are benefited by having their lateral roots kept near the surface, and by having that surface frequently loosened by the fork. This is no mere imagination of theory; for, as long since as the days of Cato—half a century before the Christian era—the importance of pulverising the soil is recorded as a revelation of practice. “What is good husbandry?” inquires that writer. “To

plough." "What is the second point?" "To plough." The third is "to manure." In later days, Mr. Barnes, one of the best practical gardeners of the present age, says,—"To secure good crops of Carrots, Parsnips, and Onions, I make it a standing rule to trench the ground well in winter, throwing it into rough ridges, forking and turning it over during frosty mornings, which not only sweetens and pulverises the earth, but eradicates insects—for I prefer a good preparation to early sowing; and practice has proved to me that a good season for sowing is any time between the 15th of March and the 10th of April. My practice is, sow every thing in drills; hoe as soon as the plants can be seen breaking the surface, continuing the hoeing throughout the season at every opportunity when the weather will permit, but not during rain, or when the ground is full of water,—not for the sake so much of destroying weeds and insects, which are rarely to be seen by following up hoeing with spirit, but with a desire of keeping one uniform pulverisation and moisture throughout, which is the means of not only continuing the present crop in the greatest of health and luxuriance, but at the same time is making a beautiful preparation for the succeeding crop.

"I keep all ground, as soon as a crop is done with, well trenched, burying all the refuse I possibly can in a green state; casting the earth into rough ridges; tumbling those ridges over with a strong fork on frosty mornings in winter and spring, and during hot sunny days in summer; continually changing the crops; keeping the hoe at work at all seasons in suitable weather; forking up all odd corners and spare ground without loss of time. By this management, I find the ground is always in good condition, and never tired by cropping; some judgment only being exercised in applying such properties again to the soil that have been taken from it, or that are likely to be required by the succeeding crop. To rest or fallow ground for any length of time, is only loss of time and produce; more benefit will be obtained by trenching and forking, in frosty or hot sunny weather, in a few days, than a whole season of what is erroneously called rest or fallow. Trench, fork, and hoe, change every succeeding crop; return to the earth all refuse that is not otherwise useful in a green state, adding a change of other manures occasionally, especially charred refuse of any kind, at the time of putting the crop into the ground. Every succeeding crop will be found healthy and luxuriant, suffering but little either from drought, too much moisture, or vermin."

The benefit derived from keeping the roots near the surface is more apparent in fruit trees and other perennials than in our annual crops, inasmuch as that the roots of trees being thus kept within the influence of the solar rays, they always vegetate early, and ripen well their young wood; yet the quantity of oxygen absorbed by the roots of annual plants is very large, being, in the instances of the Radish, Carrot, and others, not less than their own bulk in the course of twenty-four hours.

Saussure, having taken up some young plants of the Horse-chestnut, furnished with their leaves and weighing about 460 grains, he introduced their roots, which were nearly a foot in length, into receivers of about sixty cubic inches in capacity, and luted the base of the stem to the neck of the receiver. Into one of the receivers—each of which contained a quantity of distilled water—he introduced twenty-eight cubic inches of nitrogen, which were in contact with the upper part of the root, while the under part was immersed in the water. Into another he introduced an equal quantity of hydrogen; and into a third an equal quantity of carbonic acid. The plant whose root was in contact with the carbonic acid died in the course of eight days: the others lived a fortnight, but had not diminished the volume of their atmosphere. But plants which were placed at the same time in a similar apparatus, furnished with atmospheric air, gave a very different result; for, at the end of three weeks when the experiment was stopped, they were still fresh and vigorous, and the volume of their atmosphere was diminished.—(*Sur la Veg.*, chap. iii., sect. vi.)

Perpendicular roots do not thrive so well, other circumstances being the same, in a stiff and wet soil as in a friable and dry soil; while plants with slender and divided roots thrive equally well in both; but this is, no doubt, owing to the obstacles that present themselves to the passage of the oxygen in the former case, on account of the greater depth and smaller surface of the root. It was further observed, that roots which penetrate into dung, or into pipes conducting water, divide into immense numbers of fibres, and form what is called the "fox-tail root;" but it is because they cannot continue to vegetate, except by increasing their points of contact, with the small quantity of oxygen found

in such mediums. Lastly, it was observed that plants whose roots are suddenly overflowed with water remaining afterwards stagnant, suffer sooner than if the accident had happened by means of a continued current. It is because, in the former case, the oxygen contained in the water is soon exhausted; while in the latter it is not exhausted at all.—(Keith, ii.)

(*To be continued.*)

ANNUALS.

The following queries have been sent to me from *A. B. C., Barnstaple*, and the answers may be of service to many of the readers of THE COTTAGE GARDENER.

"1st. How is Gaillardia to be raised from seed? Does it require heat? The writer has failed in raising it, either from saved or bought seed."

The Gaillardias are all natives of the western hemisphere—some from Carolina, others from Louisiana, and the rest from North America. hence they require gentle heat to cause the seeds to germinate. The seeds should be sown in warm peat and sand, in equal parts; and should not be covered more than a quarter of an inch deep, and just kept moist. I have never found any difficulty in getting them to grow. Probably your saved seed was not ripe, and you have sown them too early, and given too much water, or covered them too deep. You should have stated more fully how, and in what, you sowed your seed, and in what temperature you placed the pots.

"2nd. Please to name the best annuals, and add what annuals should be massed in a pot, or put two or three together, for greenhouse decoration in early spring."

There are here two or three queries in one. I will take them as they stand in the query, giving first the new annuals for last year (1858). In many parts of Britain they are as little known as those that are new this year.

ACROCLINIUM ROSEUM.—A beautiful rose-coloured everlasting flower, a foot high, from South-west Australia, requiring a gentle heat to cause the seeds to germinate. The treatment required for the old favourite *Rhodanthe Manglesii* suits it exactly.

ALONSOA WARCZEWICZII.—This is also a handsome new annual, with scarlet flowers growing a foot high, requiring the same treatment in raising it as the preceding species.

CALLIOPSIS TENUIFOLIA BURRIDII.—A handsome, hardy annual, from Texas, with large crimson-and-yellow flowers. May be sown in the open border towards the end of April. It grows three feet high, and requires plenty of room.

CLARKIA GRANDIFLORA MARGINATA.—Petals rosy crimson, beautifully margined with white, growing a foot high. It is a hardy annual, and a garden variety. Should be sown in the open border the last week in April.

ESCHSCHOLTZIA TENUIFOLIA.—Yellow flowers, dwarf habit, from California. A showy, hardy annual, growing only six inches high. Excellent for bedding. Should be sown in the open air the first week in May.

LEPTOSIPHON AUREUS.—A golden-coloured annual, from California, growing only six inches. Should be sown in the open border, or in beds, in May. Very hardy.

LINUM GRANDIFLORUM VERUM KERMESINUM.—A beautiful annual, from Algiers. The flowers are large, and of a rich crimson colour, growing six inches high. It forms, when in flower, a splendid bed, lasting from July to September. There has been some difficulty found, by many growers, in getting the seeds to germinate, the outer coat being so hard. The best and surest way is to soak the seeds in milkwarm water for a day or two; then wipe them clean, and sow them in a wide, shallow pan, covering them half an inch, and placing them in a gentle, moist heat—they will come up in a few days. When large enough, transplant into other pans; and finally plant them out in the bed where they are to flower in May. As this is a really handsome plant, it is worthy of this extra trouble.

LUPINUS HYBRIDUS INSIGNIS NOVA.—A garden hybrid of great beauty. It is of a dark-red colour, growing two feet high, and should be sown in the open border in May.

LUPINUS SUBCARNOUS.—A hardy annual, from Texas, very beautiful, growing a foot high. Should be sown the last week in April in the open border.

CENOTHURA DRUMMONDII NANA.—As its name imparts, this is a dwarf variety, growing six inches high. It is from Texas, and has clear yellow flowers. Well adapted for bedding, flower-

ing from July to October. Requires raising in gentle heat, and planting out in May.

TROPEOLUM NASTURTIUM (New dwarf crimson, Scarlet, and Spotted).—These are all garden hybrids, but come true from seed. Free to bloom, and useful for bedding.

WHITLAVIA GRANDIFLORA.—A hardy annual, from California, of a dark-violet colour, growing a foot high. Well adapted for pots, rockwork, and bedding. Should be sown early in May. It flowers from July to October, and is a free bloomer, and very handsome.

The New Annuals for 1859, are—

CALLIOPSIS BICOLOR NANA.—Though not quite new, this dwarf has proved to be a valuable annual for bedding. It is of a dark-red colour, grows only a foot high, and is very hardy. Sow early in May.

COLLINSIA MULTICOLOR MARMORATA (marbled).—A garden variety, growing nine inches high, with flowers of a white and rose colour, perfectly hardy. May be sown in April. Flowers from June to October.

FENZLIA DIANTHIFLORA.—A rose and lilac-coloured annual, with dark eye, half hardy. Height six inches, flowering from July to October. Well adapted for bedding, and to grow in pots for the greenhouse. Very beautiful. Requires to be sown in a gentle heat early in April.

IPOMÆA HEDERACEA SUPERBA GRANDIFLORA, I. **HEDERACEA LILACINEA**, I. **HEDERACEA ATRO-VIOLACEA**.—All these are greenhouse annual climbers, with white margins, and are exceedingly beautiful. In a warm situation they will grow well, and flower profusely in the open air.

LUPINUS NANUS ALBUS.—The dwarf Lupin, with white flowers. Novel in colour, and very pretty. To be sown early in May. A garden variety.

NOLANA PARADOXA VIOLENCEA.—This is a low creeping annual, with violet-coloured large flowers, well adapted for baskets in a greenhouse, or for rockwork in the open air. The colour is rich and beautiful. Sow in May, in the open border, or in pots, if required for basket culture.

ENOTHERA BISTORTA VEITCHII.—A half-hardy new annual, from California. The flowers are yellow, with a dark spot at the bottom of each petal. It grows a foot high, and flowers from July to October most profusely. This will be a favourite bedding plant, and does well on rockwork. Sow in pots, place in gentle heat in April, and plant out in June.

SALPIGLOSSIS SINUATA ATRO-COCCINEA.—A new dark scarlet variety, of great beauty, growing a foot high. Suitable for greenhouse decoration. Sow in pots, in gentle heat, in April. Pot off singly in small pots, and repot twice afterwards. Worthy of every care and general cultivation. A garden variety.

TROPEOLUM NASTURTIUM—**Tom Thumb** (Carter's).—This is a very useful variety, bright scarlet, like the *Tom Thumb* Geranium, and is well suited for beds, pots, or vases. The flowers are large, and stand above the foliage. Very showy, and free to flower.

VISCARIA OCULATA DUNETTII.—A lovely variety of a lovely species. Flowers rosy blush, with a very dark eye. A beautiful hardy annual, growing a foot high, and blooming profusely. May be sown the first week in May, on a border or a bed.

CHRYSANTHEMUM TRICOLOR BURRIDGEI.—This is a beautiful variety, raised by Mr. Burridge, the noted flower-seed grower, at Colchester. The colour is white, with crimson-and-yellow circles at the base of each petal. Suitable for a large bed, or for the back row of a ribbon border. May be sown in April, in the open border.

The second part of the query refers to such annuals as may be sown in pots, for, as our Correspondent says, to bloom in masses, or in twos and threes in the greenhouse.

The following may be sown to bloom in masses; but they should not be allowed to stand very much crowded. On the contrary, I would advise them to be thinned out, so as to allow each plant at least an inch square:—

Acroclinium roseum. For description, see preceding list.

Clintonia elegans. Blue. Six inches high.

“ **pulchella**. White and yellow. Six inches high.

Fenzlia dianthiflora. See preceding list.

Grammanthes gentianoides. Scarlet. Six inches high.

“ **crocea**. Yellow. Six inches high.

Leptosiphon androsaceus. Various-coloured. One foot high.

“ **densiflorus**. Purple. Nine inches high.

Mesembryanthemum tricolor. Pink. Six inches high.

Rhodanthe Manglesii. Rose and yellow. One foot high.

The following should be sown in the autumn, and potted one or more in a pot, to flower as soon as the greenhouse plants are placed out in the open air:—

***Brachycome iberidifolia**. Blue. Six inches high.

Browallia demissa. Blue. Nine inches high.

“ **elata**. Pale blue. Eighteen inches high.

Culandrinia discolor. Rose. One foot high.

“ **grandiflora**. Purple. One foot high.

***“ umbellata**. Crimson. One foot high.

Cleome speciosissima. Purple. Very showy. One foot high.

Didiscus caeruleus. Pale blue. Eighteen inches high.

Eucnida Bartonoides. Yellow. One foot high.

Gaillardia hybrida grandiflora. Crimson and yellow. Very fine and showy. Two feet high.

Humea elegans. Biennial. Sow in June, to flower the following year.

***Linum grandiflorum kermesinum**.

Martynia fragrans. Pale purple. Very fragrant. Two feet high.

Phlox Drummondii. Various-coloured. One foot high.

Portulaca. Many varieties. Various colours. Six inches high.

***Salpiglossis sinuata**. Various. One foot high.

***Schizanthus retusus**. Scarlet and orange. Very showy. Two feet high.

“ **pinnatus Priestii**. White.

***Thunbergia alata** and varieties. Climbers.

Tropaeolum Lobbianum and varieties. Climbers.

Besides these there are Balsams, Cockscombs, tree Mignonette, Globe Amaranths, &c.

All these latter should be sown in March, potted off singly, and grown on in heat till they are fully grown and in flower; then to be removed into the greenhouse. Those marked * are the best for this purpose.

“ 3rd. For the sake of those not over-rich, would you kindly mention the best varieties of the twenty-four and thirty-six colours of German Aster you see advertised in the seed-lists of the present year.”

The fact is, the seed-lists do not give the different colours of these flowers sold in sealed packets; but there are smaller packets of twelve varieties; and some of the best new varieties only contain six. Some seedsmen only charge for these smaller packets 1s. 6d. Surely that is cheap enough, even for those that are not over-rich. A good plan would be, for such as have small gardens, for two or three to join in purchasing different packets of different sorts; they would then have more varieties, and not in such quantities.

“ 4th. Will you try to induce seedsmen, &c., to make the packets smaller, and charge less? We do not want to sow our gardens like our fields with one crop; but like variety, even as regards scarce seeds. A few of a moderate price would, I think, pay better than more than is really wanted, at a price that people will not give.”

Older annuals may be had in small quantities at a low price; but new kinds, I fear, the seedsmen will not part with at less than they advertise. The last year's annuals are offered from 4d. to 6d. per packet; but this year's new annuals are generally from 6d. to 1s. per packet. The expense of procuring them from abroad renders this charge necessary. However, most of the seedsmen will read this paper and the queries; and if they choose to make an alteration next year, our correspondent will be glad he has sent these queries. As I said before, let two or three join, and then the price will be reduced individually.—T. APPLEBY.

HISTORY OF THE VERBENA.

Verbena melindres, the first scarlet, was introduced into this country (America) by the late Mr. T. Hogg, of New York—the man of truth—and by him distributed at a reasonable price, to his customers. I purchased a small plant at his nursery in 1832 or 1833. In 1834 it was sold by the wagon-load in the Philadelphia market; and was, for two or three years, the leading plant. In 1837 **Verbena Tweediana** was introduced simultaneously, and on board the same ship, by a Philadelphia nurseryman and Mr. George C. Thorburn, of New York. It was considered a superb affair, and sold readily at three dollars a plant. In 1838 Mr. Eyre, supercargo of the ship “Globe,” brought from Mr. Tweedie, of Buenos Ayres, a paper of Verbena seed, from which were raised the white, rose, pink, and purple varieties. The flower of the White Verbena was exhibited before the Pensyl-

vania Horticultural Society, and crowds of visitors went the next day to a florist's in South Twelfth Street, to see the plant. There was, the same year, raised in the Glasnevin Botanic Garden, near Dublin, Ireland, a white Verbena, which they called *V. teuroides*. The stock was sold to a Scotch house for £10, and the Philadelphia variety was sent to an English house. When the two sorts were brought into comparison, they were

considered the same. The pink and rose variety went to Edinburgh: one was there named *Neillii*, and the other the name of the grower. The purple variety was in part spirited away from the grower; and the balance was sent to the Hendersons, of Pine Apple Place, London, and was sent out as *V. Hendersonii*, and had what was called a great run.—(*American Gardener's Monthly*.)

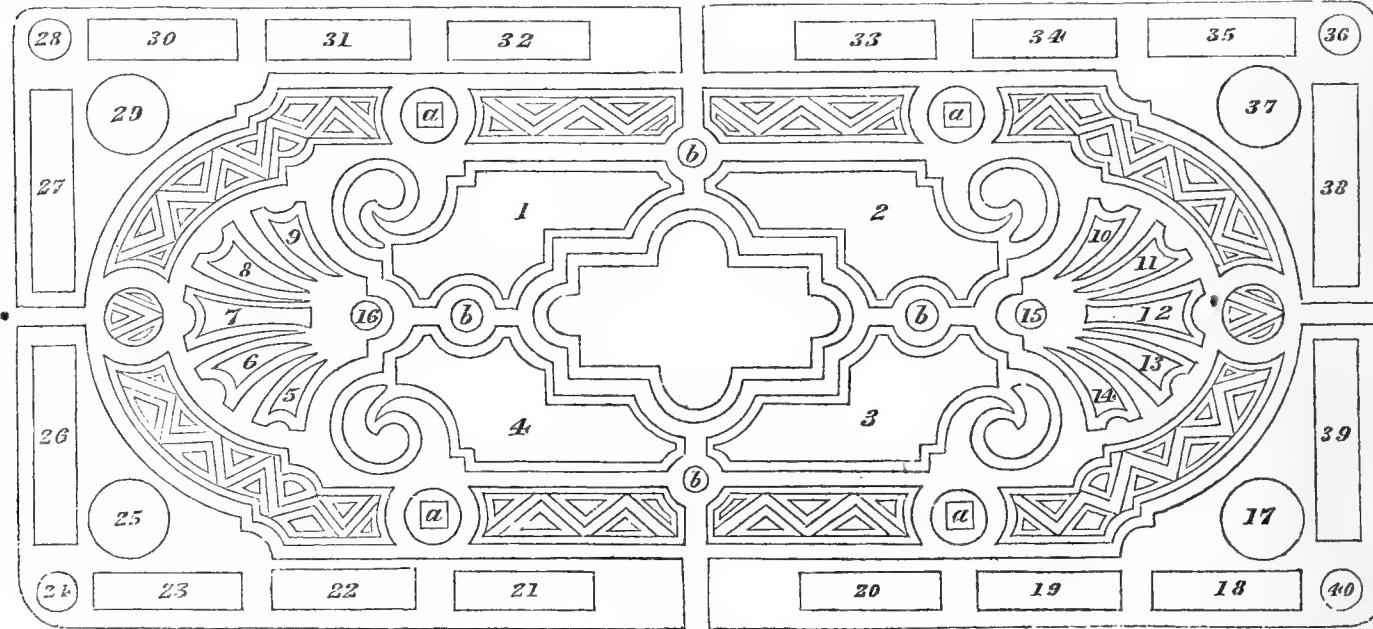
THE NEW FLOWER GARDEN AT WORSLEY HALL,

THE SEAT OF THE EARL OF ELLESMORE.

I HAVE, at last, the pleasure of presenting to the readers of THE COTTAGE GARDENER a plan of half of this far-famed flower garden.

It may be remembered, that about this time last year, I gave a report of a visit I made to Worsley Hall; and I mentioned that I intended calling again in the summer, when this garden was in full bloom. I had that pleasure last August; and I must, in

justice to Mr. Davidson, the gardener, declare that a finer blaze of floral beauty I never saw before. Every bed was well furnished, and every plant healthy and well-bloomed. In my former communication I stated that I hoped to get a plan of this new garden; but from various causes, which I need not mention, I did not succeed till recently, and with it a list of the plants in each bed, which Mr. Davidson had kindly drawn up for me.



* Centre Walk.

+ West end.

In the centre of each half of the garden there is a fountain and basin of water, surrounded with walks, and four large scroll beds. At each end of these there are five small beds, which, with the turf, form a resemblance to a lady's fan. The whole of these are enclosed by a series of chain beds intermixed with triangular beds of dwarf Box, and four large vases filled with scarlet Geraniums, marked on the plan *a a a a*. The chain beds were filled with the dwarf blue Lobelia. Four Irish Yews stand in the places marked *b b b*. Then at the angles there are four large circular beds, thrown up six or seven feet high, marked severally 25, 17, 37, 29, planted with scarlet and variegated Geraniums, as in the accompanying list. Then next to these, and the chain beds and vases, there is a broad margin of turf, with beds of a parallelogram form, and four circular flat beds, all filled with flowers as indicated in the list. Between the two divisions of the garden there is a broad gravel walk, twenty-seven feet wide; and, surrounding the whole, is another broad gravel walk twelve feet wide. Beyond this the remainder of the level terrace is covered with green turf, forming, as it were, a green frame to the picture. From the upper terraces near the mansion this lower terrace flower garden has a fine effect. The vases, Irish Yews, and the four large raised circular beds, effectually take off any tameness or flatness which would appear if they had been excluded. To give greater effect, the narrow walks amongst the beds are made of red gravel, excepting the very narrow ones forming the chain beds—these are of white gravel. The dotted lines show a bordering of turf round each bed next to the gravel.

The extent of this new garden, including the lawn and broad walks, is a little under three acres. It is situated before the front of the mansion, and is reached by a flight of turf steps. Between the upper terrace and the slope to the lower one there is a stone balustrade, which prevents the eye from seeing the new garden from the living rooms. This balustrade, I understand, is to be removed to the bottom of the first slope, and will then be out of

sight from the windows; and that removal will throw open a view of the new garden.

A considerable addition is now being made to the lake beyond the lower terrace, which will add greatly to the interest of the place.

LIST OF THE PLANTS IN THE BEDS LAST SUMMER.

No.	
1.	Scarlet Geranium.
2.	Yellow Calceolaria.
3.	Scarlet Geranium.
4.	Yellow Calceolaria.
5.	Light Verbena.
6.	Scarlet ditto.
7.	CEnothera prostrata.
8.	Scarlet Verbena.
9.	Light ditto.
10.	White ditto.
11.	Scarlet ditto.
12.	CEnothera prostrata.
13.	Scarlet Verbena.
14.	White ditto.
15.	Delphinium grandiflorum, edged with Verbena.
16.	Ditto ditto.
17.	Scarlet Geranium.
18.	Yellow Calceolaria.
19.	White Petunia.
20.	Scarlet Geranium.
21.	White Petunia.
22.	Yellow Calceolaria.
23.	Scarlet Geranium.
24.	Yellow Calceolaria.
25.	Geranium Brilliant.
26.	Centre Blue Larkspur, one side Scarlet Geranium, the other Yellow Calceolaria.
27.	Ditto ditto ditto.
28.	Dark orange Calceolaria.
29.	Flower of the Day Geranium.
30.	Scarlet Geranium.
31.	White Petunia.
32.	Yellow Calceolaria.
33.	White Petunia.
34.	Scarlet Geranium.
35.	Yellow Calceolaria.
36.	White Verbena.
37.	Scarlet Geranium.
38.	Countess of Ellesmere Petunia.
39.	Shrubland Rose ditto.
40.	Light Verbena.

If the reader carefully study the arrangement of colours, he will find great attention has been given to produce contrasts or competing beds; every colour having a counterpart. The other half is, of course, an exact copy of the one given.—T. APPLEBY.

STRAW ROPE AS A PROTECTION FOR FRUIT BLOSSOM.

A FRIEND of mine in Northamptonshire, possessing a good extent of fruit-wall (stone), has, for the last ten years, protected his trees by poles reared against the wall (standing out from the foot of the wall from four to six feet, according to the height of the tree). Along these poles, at distances of four to six inches, ropes, made of oat straw, are run in parallel lines from the tops of the poles to near the bottoms. These, after being set up, are not removed until the fruit is out of danger.

He told me, a few days ago, that during the time named, his crop has never in any one year failed. He mentioned one year in particular in which (as he was told by the gardener of a gentleman in the neighbourhood), he had more wall-fruit than there were in two large gardens named together.

This is so simple and inexpensive, and attended with so little trouble, that, at all events, it may be thought worth trying by some one. The rougher the ropes are twisted the better.—K.

THE GENUS ANECTOCHILUS.

THE surprising elegance and richness of the leaves of the genus under consideration render it easy to imagine the pleasure imparted to anyone who, for the first time, views a collection of these plants. We can also readily participate in the regret, that their management is still within the means of the comparatively few. The expense of the plants, and of their cultivation, which is thought necessary, has, doubtless, deterred many of those who delight in admiration of the extraordinary in nature from attempting such an addition to their collections. In a cultural sense, much of the desired success depends upon the knowledge of the peculiarities and the geographical positions which they inhabit in a state of nature. The regions whence *Anectochilus* are obtained are remarkable for three distinct seasons, in which the plants grow, rest, and produce their inflorescence. The first season is distinguished by its great heat and excessive moisture; the next by a considerable reduction of both; and the third by an increased temperature, but devoid of the aqueous character of the first period. Upon these facts we must base our cultural operations.

As soon as growth commences—which will be about the latter end of February, and is the best time to commence the active season—they will likewise readily respond to any increase in the supply of moisture and heat. In about a fortnight, look over and repot such as may require the change, using a compost of good fibrous turfy peat, broken very fine, a little decayed wood, and one-third charcoal reduced nearly to powder, with chopped sphagnum moss, and good sharp silver sand. These should be well mixed. Good drainage must be secured, as the escape of superfluous moisture from the roots of the plants is a matter of the utmost importance. Fill up with broken potsherds and bits of charcoal to about half the depth of the pot; covering these with the rough decaying surface of the peat. Fill up round the ball of the plant with the compost, prepared in a state as rough as possible compatible with good potting. On the surface put a layer of good silver sand, powdered charcoal, and moss (*Sphagnum obtusifolium*), chopped very fine, and thoroughly mixed together about one-eighth of an inch in thickness. Cover the plant with a clear bell-glass, and stand the pot upon a bottom heat about 70°, maintaining an atmospheric maximum temperature of 75°, and a minimum of from 60° to 65°. At the same time provision should be made for a supply of vapour, that a moist heat may prevail as occasion may require. A gradual and continual escape of vapour among the plants, when in an active state, is every way preferable to the disfiguring effects of a rush of steam.

The spring and the summer management may be summed up in a few words:—a gradually increasing supply of both heat and moisture is its leading characteristic, proportioning the supply of water to the root in a corresponding manner. During the day the glasses must be shaded, and entirely removed for about four hours during the evening; this will allow the condensed moisture to escape.

From the month of May till August, the summer treatment should prevail. Air may be admitted freely; and if in sufficient quantity to agitate the leaves of other plants in the same house, so much the better, provided the maximum temperature is maintained, and an extra amount of moisture at night is supplied to the plants.

Through the winter, the rule to be observed is, to keep those

plants which have completed their growth quite dormant, and those which are still in activity (a state to be regretted, but not always to be prevented), gently growing.

One of the main objects to be attained, in order to simplify the management of these pets, is to adopt their seasonal actions to the change of our climate,—i.e., to complete their growing periods, so as to have them in a state of repose during the worst of our winter; and every endeavour should be used to induce the desired state of rest.

The following are six of the most distinct and beautiful, and which may be procured at a moderate cost of any of the large metropolitan nurserymen:—*Anectochilus argenteus*, *A. Lowii*, *A. setaceus*, *A. striatus*, *A. xanthophyllus*, *A. Lobbii*.—J. R. TANTON, Gardener to H. O. Nethercote, Esq., Moulton Grange, Northampton.

FRUITS ADAPTED TO THE VARIOUS LOCALITIES OF GREAT BRITAIN.

(Continued from page 383.)

GRAPES.

BLACK HAMBURGH (*Hampton Court*; *Knevett's Black Hamburg*; *Merrick's Victoria*; *Red Hamburg*; *Victoria*; *Warner's Hamburg*; *Blauer Trollinger*; *Frankenthal*; *Maroquin d'Espagne*).—Bunches large, broadly shouldered, conical, and well set. Berries round, inclining to oval. Skin thin, but membranous, deep blue-black, covered with blue bloom. Flesh rather firm, but tender, very juicy, rich, sugary, and highly flavoured.

This highly-popular grape succeeds under every form of vine culture. It ripens against a wall, in favourable situations, in the open air. It succeeds well in a cool viney় ; and it is equally well adapted for forcing. The vine is a free bearer; and the fruit will hang, under good management, till January and February.

BLACK JULY (*Early Black July*; *July*; *Madeleine*; *Madeleine Noir*; *Morillon Haïtif*; *Raisin Précoce*; *De St. Jean*; *August Traube*; *Jacob's Traube*).—Bunches small and cylindrical. Berries small and round. Skin thick, deep purple, covered with blue bloom. Flesh sweet and juicy, but not highly flavoured. Its chief recommendation is its great earliness, and the facility with which it ripens against a wall in the open air. The flowers are tender, and, consequently, unless grown in a cool viney় , the bunches are loose, and the berries thin; but when protected, the plant produces close, compact bunches, and is an excellent bearer. Although this is the earliest grape, it is not so highly flavoured as Black Cluster and Miller's Burgundy.

Black Lisbon. See *Black Prince*.

Black Lombardy. See *West's St. Peter's*.

Black Morillon. See *Black Cluster*.

Black Morocco. See *Morocco*.

Black Muscadel. See *Morocco*.

BLACK MUSCADINE (*Black Chasselas*; *Chasselas Noir*).—Bunches medium sized, compact. Berries about medium sized, round, inclining to oval. Skin thick, deep purplish-black, covered with blue bloom. Flesh juicy, sweet, sugary, and richly flavoured. When well ripened, this is an excellent grape, and has a trace of musky aroma in its flavour; but, to obtain it thus, it requires to be grown in a warm viney় .

BLACK MUSCAT OF ALEXANDRIA (*Red Muscat of Alexandria*).—Bunches large and shouldered. Berries large and oval. Skin thick, dark reddish-purple. Flesh firm and crackling, with a rich, sugary, and musky flavour. A first-rate grape. The berries are rather smaller than those of the White Muscat of Alexandria, but are equally rich in flavour, and ripen more easily. It may be grown either in a warm viney় , or a hothouse; but the latter is not indispensable.

Black Palestine. See *Black St. Peter's*.

Black Portugal. See *Black Prince*.

BLACK PRINCE (*Alicante; Boston; Pocock's Damascus; Sir A. Pytche's Black; Steward's Black Prince; Blauer von Alicant; Alicantenwein*).—Bunches long, and generally without shoulders; but occasionally shouldered. Berries above medium size, oval. Skin thick, deep purplish-black, covered with thick blue bloom. Flesh white, or greenish, tender, very juicy, with a rich, sugary, and sprightly flavour. The seed-bearing string (placenta), which is drawn out when the berry is separated from the stalk, has a crimson streak in it. This is a grape of first-rate quality, ripens well in a cool viney, or against a wall, in favourable situations; and always colours well. The vine is a good bearer; the leaves in autumn die off, beautifully variegated with red, green, and yellow.

This is the *Alicant* and *Black Spanish* of Speechly, and, according to him, it is also called *Lombardy*. It is the *Blauer von Alicant* of Fintelmann, and the *Alicantenwein* of Christ; but the true *Black Spanish* is *Black St. Peter's*, and it, also, is sometimes called *Alicant*.

BLACK ST. PETER'S (*Alicante; Black Lisbon; Black Portugal; Black Palestine; Black Spanish; Black Valentia; Oldaker's St. Peter's; St. Peter's; Espanye Noir; Sanct Peter's Traube; Schwarzer Spanischer*).—Bunches large and long, sometimes shouldered. Berries above medium size, round. Skin thin, deep blue-black, and covered with bloom. Flesh tender, juicy, and with a rich, brisk flavour. An excellent late grape that will hang till March. It requires to be grown in a warm viney; but will not bear much forcing, otherwise the berries are liable to crack.

Blacksmith's White Cluster. See *Scotch White Cluster*.

Black Spanish. See *Black Prince*.

Black Spanish. See *Black St. Peter's*.

BLACK SWEETWATER (*Waterzoet Noir*).—Bunches small, short, and compact. Berries round. Skin very thin, and black. Flesh tender, juicy, and very sweet; but has little aroma or richness. This succeeds well against a wall, where it ripens early, or in a cool viney; but it is impatient of forcing, and the berries are liable to crack when subjected to too much heat.

BLACK TRIPOLI (*Pope Hamburg; Tripoli*).—I have never been able to detect any marked difference between this and the *Black Hamburg*. After examining bunches of the fruit from Mr. Tillery, of Welbeck, and comparing them very closely with those of *Black Hamburg*, I have come to the conclusion that *Black Tripoli* is a mere form of *Black Hamburg*, and only differs from it in the berries colouring more freely, and becoming more intensely black; in all other respects there is no difference between them.

Black Valentia. See *Black St. Peter's*.

Blanc Précoce de Keenzheim. See *Early White Malvasia*.

BLANCHE (*Lashmar's Seedling; Macready's Early White*).—Bunches about five inches long, with a very long stalk, loose, and with many undeveloped berries. Berries medium sized, roundish-oval. Skin thin, and green. Flesh very thin and watery, and, though without much flavour, is agreeable and refreshing. It ripens admirably against a wall in the open air, and is much better suited for this purpose than many others so cultivated.

Blauer von Alicant. See *Black Prince*.

Blauer Clavner. See *Black Cluster*.

Blauer Müllerebe. See *Miller's Burgundy*.

Blauer Trollinger. See *Black Hamburg*.

Blue Frontignan. See *Purple Constantia*.

BLUSSARD NOIR.—Mr. Thompson says, "This may be described as a smaller, earlier, and more sugary variety, than the *Black Hamburg*, which in other respects it resembles."

Boston. See *Black Prince*.

Boudalès. See *Œillade*.

BOWOOD MUSCAT.—This does not differ materially from the *Muscat* of Alexandria, except in setting its fruit more freely than that variety, and, consequently, in producing a better-furnished bunch. In the first bunches produced by the seedling plant the berries were decidedly pear-shaped, which distinguished it at once from the parent; but, that character having disappeared, the difference between them cannot so easily be detected.

Brizzola. See *Barbarossa*.

BUCKLAND SWEETWATER.—Bunches large, shouldered, and well set, heart-shaped. Berries large, round, inclining to oval. Skin thin, transparent, pale green, becoming pale amber when ripe. Flesh tender, melting, and very juicy, sweet, and well flavoured. Seeds rarely more than one in each berry. It ripens in a cool viney.

Burgundy. See *Black Cluster*.

Busby's Golden Hamburg. See *Golden Hamburg*.

CAILLABA (*Caillaba Noir Musquée*).—Bunches long. Berries rather below medium size, round. Skin thin, but membranous, black. Flesh tender, juicy, and sweet, with a *Muscat* flavour. This is a moderately early grape, and ripens in a cool viney about the beginning or middle of September. The vine is delicate, and requires high cultivation.

CALABRIAN RAISIN (*Raisin de Calabre*).—Bunches large, slightly shouldered, long, and tapering, sometimes upwards of a foot in length. Berries large, quite round. Skin thick, but so transparent that the texture of the flesh and the stones are distinctly visible; white. Flesh moderately firm, with a sugary juice and good flavour. This is a late and long-hanging grape, forming an excellent white companion to *Black St. Peter's*. It is not of first-rate quality as to flavour; but is, nevertheless, a valuable grape to grow on account of its late-keeping properties. The vine is a strong grower and a good bearer; succeeds in a cool viney, and will also stand a good deal of heat.

CAMBRIDGE BOTANIC GARDEN.—This has been said to be identical with *Black Prince*, with which it has now, in many instances, got confounded; but it differs from that variety in having shorter and much more compact bunches. Bunches rarely shouldered. Berries large and oval. Skin brownish-black. Flesh firm, juicy, sweet, and highly flavoured; with from two to three stones in each berry: while in *Black Prince* they vary from three to five.

An excellent out-door grape, ripening well against a wall, and well adapted for a cold viney. Mr. Rivers has found it well suited for pot culture.

Campanella Bianca. See *Royal Muscadine*.

(To be continued.)

QUERIES AND ANSWERS.

HYBRID EPIMEDIUM—PRESERVING POLLEN.

"I send you a bloom of a hybrid Epimedium, which I raised three or four years ago, accompanied by a bloom of each of the parents—*E. colchicum*, female, and *E. macranthum*, male. You will see how exactly intermediate the hybrid is. It is an extremely elegant plant. I have some more hybrids coming on; but they will not bloom this year. I enclose also a bloom of what I have as *Narcissus dubius*. Can you tell me if it is true, and whether it is the same as *N. papyraceus*? I have *Gladiolus Namaquensis* coming into bloom. Can I keep the pollen for hybridising?"—A. RAWSON.

[This most lovely early-blooming *Narcissus* is *Hermione papyracea*—the *H. dubia* of Redoute, of which there are five or six wild varieties, and some cultivated kinds which have more flowers in the umbel. Your plant is one of the latter, with eight flowers in the umbel, and with the style longer than the upper anthers—a feature never known in the wild *dubia* or *papyracea*. After a careful comparison by Dr. Herbert, he came to the conclusion that "*Hermione (Narcissus) dubia* must, therefore, be trans-

ferred to *papyracea*, as variety 3 of *dubia*, or, more properly, *Gallica*." The reason for "more properly" is, that this variety *dubia* grows naturally near Montpelier; while all the rest of the group are natives beyond the Alps. The cross-bred *Epimedium* is extremely pretty—a pale yellow, and exactly intermediate between the parents *macranthum* and *colchicum*. To preserve the Gladiolus pollen for hybridising, cut off the whole flower the day before it would expand; cut away all the parts except the stamens, and place the skeleton specimen in blue or dark tissue paper; and then let the pollen ripen. If it scatter, you will see it on the coloured paper; and it will keep good for the next season if no damp gets to it. But is *Namaquensis* a true Gladiolus? Our own experience would say that this natural pigmy will not cross with any of the present cultivated races of Gladiolus, even if there were a bed of each sort in bloom at the same time.]

REMOVING BULBS DONE FLOWERING— RASPBERRIES ON A CLAYEY SOIL.

"Will you inform me which is the best method of preserving bulbs, which must be removed from the beds, in order to make room for summer flowers? Is it better to replant them, or to dry them?"

"I am unsuccessful, also, in the growth of Raspberries. The soil in which they are now grown is clay; and I wish to know if mixing sand with it would be of any use, and if it is too late to do so this spring."—YOUR CONSTANT READER.

[Snowdrops, Scillas, Crocuses, and *March*-blooming bulbs of any kind, are better if they are removed and parted just as they are going out of bloom. Let them be carefully planted in the reserve-ground, and be watered occasionally in dry weather, so as to be kept green and growing as long as it is natural for them to do so. *April*-blooming bulbs, and other spring flowers, should remain till the day the beds are wanted for the bedding plants. They should then be taken up carefully, with as much soil about the roots as possible, and not be parted or divided on any account. Plant them carefully, and water also till the leaves of the bulbs turn yellow naturally, and till the others are established in the new ground. No bulb should be allowed to dry for want of water so long as it is natural for it to be green. Sand, and plenty of it in a dry state, is one of the best correctors of clay ground for Raspberries. If you could add a heavy dressing of littery short dung at the same time, and with a fork work the sand and dung in among the roots, and down a foot deep or more between the rows, and then give a surface-mulching of some loose stuff from the dung-yard all over the ground, and cut down all the canes to the surface of the ground—in another year you ought to have a splendid crop of fruit and canes. Afterwards, by adding more of the loose materials every spring and winter, and by digging or forking a little deeper each time, you might make it the best piece of ground in the garden.]

CULTURE OF THE FIG.

IN NO. 544 of your paper, I promised to write a few lines on the culture of some of the fruits that are grown in this neighbourhood, or the culture that those have had that are now growing on the estate of W. Stone, Esq., whose name, as a fruit grower, some of your readers are familiar with. I shall only speak of those kinds that are grown on an extensive scale, which are—Apples, Pears, Filberts, and Figs, but as this is the month I always, or, rather, of late years, have pruned the Fig, I shall begin with its culture.

Everyone that is at all acquainted with the culture of Figs, must know that they are easily propagated, either from cuttings or layers, or where there are old plants, so that they can be easily obtained. I find suckers grow up to trees equal if not better than those that are raised either from cuttings or layers.

There are very few gardens hereabouts, although small, that are without the Fig tree. I have been into a very great number of gardens in different parts of Somersetshire and Wilts; and in nearly all I saw it in some part of the garden; but amongst them (with few exceptions) they were long, leafless, naked-branched trees, reminding me of a gigantic fan. In many places they are allowed to grow on their own way year after year, occupying one of the best situations the garden affords, and from ten to twenty square yards of wall, yet not producing more than from two to three dozen ripe Figs in the year. This is what I call poor profit;

but if you say anything about it, the answer is, "Oh! we don't grow them for profit, but only for the novelty of the thing." I call it poor novelty as well as poor profit. It is everyone's duty to produce as much fruit as possible; therefore, it is nothing but right for everyone to try every available means in his power to obtain it.

The Fig tree, to be in a good fruit-bearing state, should have its branches from three to ten inches in length, with as many of these branches, in proportion, close against their stems as there are at their extremities; but good crops of this fruit depend on the nature of the soil, situation, drainage, and the treatment the trees are subjected to.

We have them, here, planted on all kinds of soils, and in almost all kinds of situations, growing against walls, and as open standards, pyramids, and a row which even now forms a hedge about fifteen yards in length, which, last summer, ripened between two and three hundred dozen of Figs. These are planted on the side of a hill, which has a declivity of about one yard in four, full south, and at about 130 feet above the level of the river Avon. These are planted on very shallow ground, not having more than six inches of not-over-good soil. Under that, small stones and lime rubbish, which make excellent drainage for them, and the very thing they seem to delight in. I do not think that there is a shoot of last year's growth on this row that reaches a foot in length. They, at present, seem to be promising to double last year's crop. Four years ago, these trees were growing against an old wall; but, losing all their fruit before it was ripe, by different kinds of insects, I determined to take the old wall away, which I did with wonderful success, in the saving of the crop. These that are grown on this shallow ground, are better and much richer in flavour than any we get from any of the walls where the soil is deep and rich.

The sorts mostly cultivated here are a small green Fig, *Black Genoa*, *Black Ischia*, *Brown Turkey*, and a large green one. All of these do well; but there are other sorts planted here, on a clayey soil, which do but very indifferently, the fruit dropping before it is ripe.

My mode of pruning the Fig, to keep the fruit-bearing wood short-jointed, is, in March, to take the point out of every shoot with a sharp knife. I choose a dry day for this; because, then the bleeding will stop in a few minutes, and the cut dry over; and the whole of the sap is then forced into every part of the tree equally. Through the points being taken out they do not come into leaf so soon by from ten to twelve days, which I think is rather in their favour (because of our spring frosts); and, instead of getting one long, lanky, ungovernable shoot, they produce two, three, and sometimes four, just the desired lengths for bearing fruit.

I prune wall trees and pyramids in a similar way, but always find them bear much more abundantly when grown two or three inches from the wall; and this is where the grand point lies—in keeping the lower part of the trees well supplied with short-jointed wood.

If you have a tree that has its lower branches, or all the lower part of its branches, leafless, and they are nailed in thickly, cut back every alternate one to where the branches are wanted; there will be several shoot out of each one that is cut back. The side-shoot that is nearest to the end of the cut branch should be nailed to the wall. Follow this rule all over the tree, but let the others project from the wall, which, in the following year, will all be fruit-bearing shoots, provided all the points are taken out at the same time the larger branches are pruned.

By pruning Fig trees that are grown against walls in the manner here described, in two years they would become full of short-jointed fruit-bearing wood, all projecting from the wall regularly from the place the head of the tree starts from, whether it is a dwarf, half-standard, or standard. The Figs, too, will be saved, in a great measure, from the attacks of numerous insects which are fond of feasting on these dainties, and which insects lie snugly behind the branches, especially when they are grown against old walls.

I have not the least doubt but that the same mode of pruning forced Figs, would be attended with equal results; but not having proved it, I must leave that to be tested by others.—J. ASHMAN.

PHENOMENA OF THE SEASON.—A small Cabbage Butterfly (*Pontia rapæ*), was caught on the 15th instant, at Gringley-on-the-Hill, on the extreme northern borders of Nottinghamshire; another, and a Peacock Butterfly, at Winchester, on the 17th; and a Wasp, at East Retford, on the 16th.

NETTING AS A BLOSSOM PROTECTOR.

In answer to your request, in THE COTTAGE GARDENER of March 15, to be informed of any proof as to the efficacy of netting to preserve fruit trees from frost, I have much pleasure in informing you, that, for many years, I have adopted it with complete success.

Mentioning the subject to two friends about a month ago, curiously enough they both coincided with me as to its efficacy. One of the two friends, who has a large garden attached to his Rectory, stated, that he had several times given it the most convincing trial. On the same wall he selected three trees. One he covered with fir boughs, one with bunting, and the third with netting, and that was the only tree of the three that was well covered with fruit. The other friend stated that, many years ago, he bought a hundredweight of old herring netting, at Deal, which he has used for his fruit trees for years with success; and, although it is full of holes, by applying it double and treble, it still serves his purpose. I need not say, it requires some sticks to be placed slantingly against the wall, to keep the net from touching the tree, lest the wind should cause it to pull off some blossoms. The advantages of this net, although doubled, which I recommend, are, that it requires no moving; the sun can get to the plant, and the bees to the blossom.

I hope this will fully corroborate the system adopted at Knowsley, although on a limited scale.

Old netting can be bought from a penny to three-halfpence a yard at any of the seaport towns, or in London; but it is cheaper to buy it by the hundredweight.—W. A. E.

METEOROLOGICAL REPORT FOR JANUARY.

I HAVE been pleased to see that attention is being called, in your columns, to the study of meteorology in connection with gardening and general horticultural operations. Mr. J. Robson, of Linton Park, has drawn your attention to the very small fall of rain during last year, which was very considerably below the average. I enclose you copies of my report for the month of January last, which will give some information upon the subject. This period has been remarkable for the entire absence of snow; as the ground has never been covered, and snow only fell on two occasions during the winter.—G. V. VERNON, Old Trafford, near Manchester.

"The accompanying table gives the quantity and days of ozone for each wind with which it occurred:—

Wind.	Days on which Ozone occurred.	Mean daily amount of Ozone.
	Moffatt.	Schönbein.
S.	4	8·12
S.W.	11	6·55
W.	1	6·00
		5·75
		5·82
		7·00

the mean direction of the wind accompanying these amounts being almost due S.W. The mean fall of rain for forty-seven years, given by Dr. Dalton, for January, is 2·257 in.; showing that the fall has been 0·496 in. below that average, although much less than the average of the past eight years. The amount of evaporation has been computed from the corrected readings of the dry and wet bulb thermometers, using the values of the elastic force of vapour, computed by Mr. Glaisher, in page 5 of the introduction to the second edition of his 'Hygrometrical Tables.' These determinations were taken as being deductions from the most carefully conducted experiments yet made upon this point, being those of M. Regnault, and may be found in the 'Annales de Chimie et de Physique,' troisième série, tome xv. The relations between wind, mean temperature, rain, and clouds, have been as follows:—

Days.	Direction of wind.	Mean temp.	Diffr. mean	Clouds.	Days rain.	Fall in rain.	inches.
2	N.E.	36°05'	-5°05'	6·0	—	—	—
1	N.	37°90'	-3°20'	10·0	—	—	—
5	W.	39°24'	-1°86'	9·2	2	0·051	
4	S.	41°15'	+0°05'	10·0	4	0·284	
16	S.W.	41°67'	+0°57'	8·6	9	1·358	
3	N.W.	45°90'	+4°80'	10·0	2	0·067	

Referring the wind to the four principal points only, N.=6; E.=2; S.=20; W.=24. The mean direction of the wind for the month has been S.W. 7° W. The mean direction of the wind in January, for ten years, is N. 1°0; N.E. 5°6; E. 1°4; S.E. 4°4; S. 3°8; S.W. 8°5; W. 1°9; N.W. 4°4. The mean direction

in January, for ten years, is S. 3° F. With the exception of January 1851, the month just passed has been the warmest of the last ten years, and has been remarkable for its resemblance to spring, and, at the same time, an entire absence of snow. Although the mean temperature of the year 1858 has been 1·64° below that of 1857, owing to the high summer temperature, June especially, there has been a great prevalence of diseases of the zymotic class—scarlatina and measles especially; and a great increase in pulmonary diseases during the part of the year, especially accompanying the very low temperature in November. This has caused the year 1858 to be classed as an unhealthy year, according to the figures furnished by the return of the Registrar General. The very small fall of rain during the year 1858, has, no doubt, greatly tended to increase the mortality, owing to organic matter in a decomposing condition not being removed, as it would have been by a greater quantity of rain. During the great prevalence of diarrhoea and cholera in 1832, 1849, and 1854, the fall of rain was greatly deficient; and in 1832, not more than a fourth of the average fell during the cholera epidemic.

"I remain, yours most truly,

"G. V. VERNON, F.R.A.S.

"Old Trafford, February 7, 1859."

Barometer :—	1859.	Mean of 8 years.	Diffr.
Mean (at 32° Fahr.).....	inches 29·963	29·702	+0·204
Highest	" 30·652	30·413	+0·239
Lowest	" 28·950	29·093	-0·143
Range	" 1·702	1·331	+0·371
Temperature :—			
Adopted mean	degrees 41·1	38·1	+3·0
Range for month.....	" 27·3	34·8	-7·5
Daily range	" 10·0	11·4	-1·4
Maximum in shade	" 54·3	54·3	0·0
Minimum in shade	" 27·0	19·5	+7·5
Maximum in sun	" 55·7	57·3+	-1·6
Minimum on grass	" 23·5	16·8‡	+6·7
Temperature of evaporation	" 40·4	37·0	+3·4
Temperature of dew point	" 39·5	35·5	+4·0
Temperature of air—dew point	" 1·6	2·6	-1·0
Hygrometrical condition of the atmosphere :—			
Weight of vapour in a cubic foot of air, grs.	2·81	2·39	+0·42
Required to saturate ditto.....	" 0·20	0·32	-0·12
Weight of a cubic foot of air	" 554·3	553·0	+1·3
Degree of humidity (saturation—1·000)	" 0·914	0·902	+0·042
Water in vertical column of atmos., inches	" 9·35	2·88	+0·47
Elastic force of vapour.....	" 0·242	0·208	+0·034
Clouds (Covered—10. Clear—0)	" 8·9	8·0	+0·9
Prevailing winds.....	S.W. & W.		
Rain	inches 1·760	2·804	-1·044
Number of days on which it fell	" 17	20·4	-3·4
Ozonometer { Moffat.....	inches 3·56	—	—
{ Schönbein.....	" 3·08	—	—
Daily evaporation	" 0·016	0·022	-0·006
Monthly ditto	" 0·496	0·682	-0·186

SALE OF THE LONDON HORTICULTURAL SOCIETY'S HOUSE.—Messrs. Farebrother sold this at Garraway's Coffee House, on the 23rd instant, for £2,960. The premises, 21, Regent Street, are subject to an annual ground-rent of £160.

TO CORRESPONDENTS.

APRICOT BLOOM FALLING (James Pattinson).—The bloom may fall because the fruit is set; but, if the leaves sent are from the tree, it is very evident there is a fatal defect somewhere. Without more information we cannot be sure whence the mischief arises; but we should think that the roots are defective. You do not even state where the trees are growing.

VARIOUS (J. W.).—"A square yard," of course, contains nine square feet. Fix your wires in the greenhouse for training vines, nine inches from the glass. Guano in a kitchen garden is best applied as a liquid manure to cabbages, asparagus, and rhubarb, whilst growing.

VINEGAR.—We shall be obliged by information in answer to the following from a correspondent (W. K. B.):—"I have several gallons of vinegar made from the plant, but it does not keep. I have tried sulphuric and muriatic acids, and yet the plant continues to form whenever it is set by for a few days. Can you, or any of your correspondents, say how it is to be prevented?"

AZALEA PROCUMBENS.—"A lady would be glad to know where she can procure plants of the Azalea procumbens."

FRENCH GARDENING PERIODICAL (An Unfortunate Gardener).—Any newsagent will give you the information you require. We know the most worthy works; but we know nothing about their circulation, and, therefore, might mislead you.

SUPPOSED CYCLAMEN (J. Holland).—Your plant is a miniature of a cyclamen-looking plant, but not a cyclamen. It is a small alpine plant from Switzerland, as old as the Alps, and called *Soldanella Alpina*. We shall allude to it in a review of some other spring flowers shortly.

* Unreduced. + Mean of four years only. ‡ Mean of five years only.

FLOWER GARDEN PLAN (An Old Subscriber).—The Royal Dwarf or the Tom Thumb Geraniums will never do in that centre bed; and those who advised the Anagallis for that garden were like Job's comforters. Turn over a new leaf, and lead the fashion this time. Put variegated Geraniums in the centre bed, with a good band of blue *Lobelia speciosa* round them. The two corner beds farthest from the window to be with either the Royal Dwarf or Tom Thumb; and the opposite corner beds next the window with *Aurea floribunda Calceolaria*. The circles all round each with a distinct kind of Verbena—your own choice kinds. Any colours will do with that circle and those corners. But any other plants, with the same colours, will do in the centre and corners; only the size of our plants suits that of your beds; and size must always carry the same weight as colour, in small beds. In large beds the size of the plants is not of such importance, provided you do not fill much or corresponding beds with plants that differ much in height, or style of growth, and blooming—this is what we call heights and colours to correspond. Your figure is very good, and it would be a thousand pities not to take some pains to have it tastefully planted. What a charming plan for spring flowers, so near the windows!

VARIEGATED PLANTS FOR GREENHOUSES (An Old Subscriber).—If you had waited a little more patiently, you would have seen a list of variegated plants for the greenhouse. We fear you will be disappointed with the list, it is so meagre. The fact is, there are very few plants with coloured leaves that will bear greenhouse treatment. There are plenty that are hardy, and to them we shall shortly turn our attention. The following are all we can help you to. If any of our readers know of any others we shall be obliged by their sending us their names. There are some of the Aloe tribe that have leaves covered with white watery excrescences, but they scarcely can be denominated variegated:—*Agapanthus umbellatus variegatus*, *Agate Americana variegata*, *Aloe variegata*, *Goodyera tessellata* (rare), *Hydrangea Japonica variegata alba* and *aurata*, *Solanum pseudo-capsicum variegatum*, *Ficaria aloifolium variegatum*, *F. aloifolium quadricolor*, and *F. gloriosa variegata* (almost haray).

NAMES OF PLANTS (A Subscriber).—1 and 3 were so much injured by the post-office stamping, that it is impossible to make them out. Send us better specimens, folded up in blotting-paper. 2 is *Plectranthus concolor-picta* of some; but usually called *Coleus Blumei*. 4, is a very old plant of our stoves, called *Tradescantia discolor*, one of the Spiderworts. (H. H.)—Yours is *Polygala chamaebuxus* (Milkwort, or Bastard Box). (*A Constant Subscriber*).—Your double-blossomed white shrub is *Spiraea prunifolia plena*, or the Sloe-leaved Spiraea; introduced into this country from China, in 1814, by Mr. Fortune. There is much information about it in the "Horticultural Society's Journal." (F. W. A.).—Your Fern is *Polystichum aculeatum*. It is very variable.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

MAY 25th and 26th. BEVERLEY. Sec., Francis Calvert, Surgeon, &c.
JUNE 1st, 2nd, and 3rd, 1859. BATH AND WEST OF ENGLAND. At Barnstaple, Devon. Director, S. Titman, Esq.
JUNE 6th, 7th, and 8th, 1859. GLASGOW. Sec., Robert M'Cowan, 17, Gordon Street, Glasgow.
JULY 1st, 2nd, 4th, and 5th. SHEFFIELD. Wilson Overend, Chairman. Entries close the 15th of June.

A DAY'S SPORT WITH A SCIENTIFIC FRIEND.

A RIGHT' pleasant fellow was Charles Markham. We sat on the same form at school; and, although very different in disposition, we were sworn friends. My chums said I was hot: my foes said I was passionate. Well, I cannot say which was right—both were, perhaps. I used to fret over my lessons, and chafe, and give up the task; and often I was called to a better feeling, and to one nearly allied to shame, when I looked up and caught Charles Markham's blue eye steadily fixed on me, and a quiet smile playing round his mouth. He had an inexhaustible patience. He was an ardent angler; and we often went together to a stream, where we threw flies for dace, and sometimes were rewarded by a small trout. It was fishing under difficulties, for the banks were not open. My line was continually what we used to call "hitched-up," and as constantly broken by my violent efforts to clear it. The same thing seldom happened to Charles; and when it did, he always steadily and quietly disengaged it. Half my time was taken up repairing my tackle: he fished quietly on, and caught three times as much as I did. He was never in a hurry; and his constant store of patience continually provoked me to lose the little I had. Quiet, cool, and self-possessed, bold where it was necessary, he took a position in the school which all my quarrels and fights could not gain for me: he was the captain—the first boy. We were many years together; and when the time for leaving was at hand, we mutually felt a little depressed, although it was the beginning of the grand start for us. He was clever, studious, and mechanical. He had made a camera with a cigar box, a telescope with an old book-cover and such helps as a boy finds at school—he had sketched the school and all belonging to it.

"Well, old fellow," said he to me, "here, then, we part. What are you going to do?"

"Me? They want to make me a chemist. I shall be a farmer,

I must hunt, and shoot, and all that. I am not as clever as you are. What will you be?"

"I don't know," he said. "You know my mother is a widow. I have no capital to start with; and I shall go to London and seek my fortune."

"Never mind, Charley," I said, "you are sure to get on."

We shook hands heartily; and parted, after promising to correspond. We did so for many years; but of late not so frequently as we used to do. I was installed in a farm, had been some years married, and he was become a noted man in the scientific world. I often read and heard of him. He had numerous capitals tacked to his name; but his letters told of an over-worked brain.

At last I heard from him that the physicians had ordered an entire change of air, scene, and pursuits, and absolute rest. I then received the following letter:—

"Dear old Fellow,—The doctors say I want an entire change, in order to recruit my health; and you say you want me to have a day's shooting with you. I will obey both. I am now about to provide the necessary equipment, and hope to be with you next Monday."

"I am,

"Yours, as at school,

"CHARLES MARKHAM."

I had not seen him since we left school. My wife and I speculated as to what he would be. She laughingly said she was afraid of clever men, wondered whether he took snuff, whether he wore gold spectacles, and whether he dealt in hard words and learned terms: but she was, and is, a good wife; and she prepared a hearty welcome for her husband's friend. I joked much with her before he came; I enlarged on his taste for science and mechanics; I taught her to dread the arrival of a number of mahogany cases—all brass-bound, and containing scientific and philosophical instruments; I told her to brush up all the knowledge that nursery duties had thrown in arrears;—in short, I prepared her for a regular Dr. Faustus.

I went to meet the train. Although many years had passed, I was at no loss to know my old friend. He looked ill, and older than I expected. He had not grown as much as I thought he would. At school he was the taller, but I had out-grown him. He had not lost the clear, kind, speaking, blue eye; but it seemed that illness had given it a sad expression; and, although the same smile played round his mouth when he met me, it no longer seemed to reside there. We were glad to see each other.

As I drove him from the station there was a fresh breeze that met us, and he enjoyed it.

"The doctor was not wrong," said he; "this will put me to rights."

"How often," said I, "have you been in the country since we left school?"

"Never," was his answer, "saw now and then for a day's fishing."

Our ride was short, and we arrived at home. My wife met him at the door. What a difference the reception makes when a stranger goes to a strange house. It may be the warm salutation on the threshold which at once dispels all novelty, or the formal look of a servant, who ushers you into a prim room, where the lady rises on your entrance, and bids you to accept a welcome which you have difficulty in finding. I was thankful for her kindness to him. I looked at the luggage and smiled. There were a large portmanteau, a bag, a gun-case in a new leather cover, and a strong, square deal box.

"Come in," said my wife, "your luggage shall be taken to your room."

"Thank you; but this deal box requires care."

My wife and myself had been telegraphing about that same box behind Charles's back, and we could not help laughing. The twelve years we had been separated vanished in an instant; the quiet smile of school-boy days came back; the same glance that had been so familiar to me there; and, looking at me, he said,—

"Now, what have you been at, old fellow?"

I had no secrets from my old chum; and at once, in spite of sundry "don'ts" from my wife, confessed all I had said and done. The story of the brass-bound boxes, the snuff, the gold spectacles, the hard words, the learned sentences—all were retailed, and Charles was started up-stairs to dress for dinner.

Still he did not disclose the secret of the box; but, as he went up-stairs, he turned and said, "Please to be careful with that box."

Oh, what questions I had from my wife! What did I think that box contained? It was too bad of me to tell all we had

said. What would he think of her? She should be ashamed to meet him at dinner; but she hoped he was not prosy. Dinner-time must come once in the twenty-four hours; and, as I have no sympathy with those strong-minded and natural people who think that meat should be a slice of underdone meat, held on a huge piece of bread with the thumb, while the knife-of-all-work divides it; and there is a conversation when the mouths are not too full to talk. I will, seeing I am only recounting that which occurred in my middle-class, but, thanks to my good wife, well-regulated home, tell you what we had for dinner. It would be nonsense for me to say I am not a poultry fancier. Well, then, we had a real good Dorking pullet boiled; with a piece of cherry-coloured Hampshire bacon at the other end; a dish of stewed eels in the centre; the whole removed by a leg of mutton, a pudding, and a salad. "What boots the dinner?" say some. "Nothing," is my answer. *But—oh, that horrid "But!"*—the *Times* has been filling columns about dinners, and "S. G. O."—no mean correspondent, whom I have often met, and whose really good deeds I would always chronicle; whom I have seen by the sick bed in the cottage; who is equally ready to help the distressed, to put up with the fancied ailments of a consumptive girl, the daughter of a cottager in his parish, or to assist the parish constable in arresting a man, the terror of the village of Durweston—he has brought his sound common sense to bear on the question. When I was a boy, I knew a quotation, that it was no shame to follow where Teucer led; but, as the great Duke of Wellington is said to have advised a young member never to quote Latin, and as I never took honours in that class, I will abstain. I will follow "S. G. O." and be proud if I can keep near him. The curse of the present day is, not that £600 per annum cannot live, but that it will try to compete with £6000. Next, that honest, successful industry has learned to be ashamed of its rise and origin, and would fain rival in everything its gentle blood competitors. The successful contractor or tradesman may settle in the neighbourhood of the poor gentleman. He may spend thousands where the latter cannot spend hundreds; but the gentle blood belongs to the last—and ease and bringing-up, with conscious descent, will carry off a scanty dinner served on stone china, with an ease and a charm that will be wanting where the table groans under the massive plate, and is covered with the most delicious viands. * * * I am sorry to digress, but I cannot help it.

Our dinner was served by an apt waiting-maid, and there was nothing about Charles that did not at once make all feel at home in his company.

My wife soon found we were all at home; and, after dinner, we chatted over old reminiscences, school days, boyish plans, the hopes, fears, and results of adolescence. Markham's history was that of many others. He had arrived in London, and had sought for all those employments which seemed to open a career to a man of talent—but he had long sought in vain. His scanty means were exhausted; and then he consulted with his mother as to his future course. The good woman could not doubt her son's success; nor would her mother's love shrink from any sacrifice. He was her only son, and she was a widow. He had denied himself everything to spare her; and his regret was, that his expenses straitened his mother's means. But he was sure of success. He soon found an expedient. She would let her house and come to London, she and her daughter. They would take a cottage in the suburbs, and Charles might live with them. It was his turning-point. His mind was relieved from the thought he was draining his mother—it was a relief to him to have a home where he met with unvarying kindness and constant encouragement. A scientific paper attracted the notice of an eminent man—a fortunate discovery proved profitable, and his rise was rapid. But he paid the price. The anxieties, privations, and disappointments of his early years had weakened him; and the physicians he consulted had advised that he should entirely avoid all study, and seek a change for a time. My letter reached him the day this was advised, and hence his visit.

(To be continued.)

THE BRAHMA CONTROVERSY.

In support of my pets, I must reply, briefly, to "W. H." (Exeter), and "ALPHA."

The former has settled the question, by making out that nearly all our breeds of poultry are, more or less, cross-bred. Perhaps, after this very authoritative statement, those who have rated the

Brahmas will let them and their owners have a little peace. He suggests a bit of bacon as an addition to Mr. Botham's Brahma on the table; but, may I ask, if he objects to the same addition when any other fowl is in the *pièce de résistance*? For my part, I think the addition less necessary to them than to many other of our breeds.

To "ALPHA" I would reply, that I do not think that peacock-combed Brahma will throw single-combed birds. He instances the Dorking—an acknowledged cross—as the only birds that throw varied combs. I have seen single-combed Silver-spangled Hamburgs very good in all other points save the comb. I have seen a fair Cochin hen with a rose comb, said to have been of Sturgeon's strain. Rose-combed Minorcas are not uncommon. I may be able to speak more positively as to this last question ere long. At present I have only one chicken feathered of a cross between Brahma and Dorking, and this far more approaches the Dorking; though the last year's birds, the first produce of the cross, and the parents of this chick, were very like the Brahma in all points save the fifth toe. In reference to the human subject I cannot answer his question.—J. H.

MATING POWTER PIGEONS.

"I HAVE a pair of Blue Powters which have produced a pair of young ones, of which the cock is a model of its male parent; but the hen is of a most remarkable colour—not the least approaching to blue, but a delicate grey, with tail and wing-bars a strongly contrasted chocolate. In every respect marked like its parents.

"I shall be glad to know what coloured mate to provide for her, with a view of establishing the colour; as I think it would prove an attractive addition to their limited colours."—R. S. E.

["R. S. E.'s" young hen Powter being of a delicate grey, with chocolate bars, is, without doubt, a silver, or silver-pied. The colour is not very common among Powters—still not so rare but that "R. S. E." might procure a cock to match her. Failing which, either a Dun, or very light blue, would be the most likely match to reproduce the silver colour. But Mealy, Strawberry, and Ash-coloured, being inferior colours, and not admired by fanciers, are frequently palmed off on the novice as Silvers—a colour which is generally pleasing. The first two may be known by a pinkish shade, and the neck and wing-bars inclining to red. They may be produced from red and blue: the last is nearly the tint of wood ashes, with more or less inclination to lilac. Silver is a very favourite colour of mine; and I will explain how to produce it. If you have not already a Dun, or a blue-black, couple a clear blue and a black together: these will, among others, produce a blue-black. That is to say, a black on which, in some lights, you can notice slaty bars. Match this blue-black again with a clear light blue. These, among others, will throw some Duns. I have known two Duns in the very first nest. Lastly, match a Dun with a clear light blue, and a portion of the produce will be Silvers.—B. P. BRENT.]

OUR LETTER BOX.

CAPONISING (*An Old Subscriber*).—There is no safe way of performing this very cruel operation.

SCOTCH POULTRY SHOWS (*Mrs. Swinburne*).—All Poultry Shows of sufficient importance to be advertised appear in our columns, and are then included in our permanent list.

CREWE PRIZES.—"In reply to 'G. R.'s' inquiry regarding the payment of the Crewe prize money, I would suggest that he should adopt the same course I did,—viz., issue a writ against Mr. Margetts, and the money will soon be forthcoming."—JOHN T. LAWRENCE.

DEVIZRS POULTRY PRIZES.—"My attention has to-day been drawn to a paragraph in your Number (March 15), wherein 'G. R.' wishes to know why the prizes awarded to poultry at the late Show of the Wilts Agricultural Society have not been paid? I beg to inform 'G. R.' that I am not aware of any prize remaining unpaid?"—T. W. PHILLIPS.

[We are glad to hear it. If the prizes are not paid promptly, poultry will soon cease to be exhibited.]

LONDON MARKETS.—MARCH 28.

POULTRY.

Good poultry is getting very scarce, as the tendency of the warm weather is to make it forward, and, consequently, tough.

	Each.	Each.	
Large Fowls	5s. 0d. to 6s. 0d.	Goslings	7s. 0d. to 7s. 6d.
Small ditto.....	4 0 " 4 6	Ducklings	5 6 " 6 0
Chickens.....	3 6 " 4 0	Pigeons	0 8 " 0 9
Cock Turkeys.....	9 0 " 10 0	Rabbits	1 5 " 1 6
Guinea Fowls ...	2 6 " 3 3	Wild ditto	0 8 " 0 9

